MARKET ANALYSIS SERVICE

1980 ANNUAL PRESENTATION

INPUT
LIBRARY

ABOUT INPUT

THE COMPANY

INPUT provides planning information, analysis, and recommendations to managers and executives in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions. Continuing services are provided to users and vendors of computers, com
products and service

The company carrie
depth research.
clients on importc
members analyze a
data, then develo
innovative ideas
Clients receive
access to data on
and continuous con

Many of INPUT's pr
have nearly 20 y
areas of specializ
senior managemen
marketing, or pl
enables INPUT to
to complex busines

Formed in 1974,
leading internat
Clients include c
largest and mos
companies.

M-1980
PRO
Sargent, Warren
AUTHOR
INPUT's Fifth Annual Presentation.
Market Analysis Service-1980.

UNITED STATES, West Coast
2471 East Bayshore Road
Suite 600
Palo Alto, California 94303
(415) 493-1600
Telex 171407

4676 Admiralty Way
#401 C
Marina Del Rey, California 90291
230

East Coast
st-1
w Jersey 07662

M

h Floor)

7-9 Merriwa Street
don N.S.W. 2072

JAPAN
INPUT Japan
Suite 1106
7-7-26 Nishi-Shinjuku
Tokyo
Japan 160
(03) 371-3082

000082

INPUT'S
FIFTH ANNUAL PRESENTATION
MARKET ANALYSIS SERVICE-1980

INPUT LIBRARY

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

Digitized by the Internet Archive
in 2015

https://archive.org/details/marketanalysisseunse_0

MARKET ANALYSIS SERVICE

PRESENTATION CONTENTS

1980

I. INTRODUCTION

II. EXECUTIVE SUMMARY

III. OPPORTUNITIES

- CAD/CAM MARKET
- PERSONAL COMPUTERS IN LARGE COMPANIES
- SOFTWARE DEVELOPMENT PRODUCTIVITY
- TELECOMMUNICATIONS DEVELOPMENTS
- PROCESSING DEVELOPMENTS
- FIELD SERVICES TRENDS

IV. COMPUTER SERVICES MARKETS

- ECONOMIC CONDITIONS
- U.S. MARKET FORECASTS
- EUROPEAN MARKET FORECASTS
- DATA BASE SERVICES
- PROCESSING SERVICES TRENDS
- USER SITE HARDWARE SERVICES
- APPLICATIONS SOFTWARE PACKAGES
- COMPUTER SERVICES PRICING
- SALES PRODUCTIVITY

V. COMPETITION

- LARGE COMPANIES
- IBM
- "USER" ACTIONS
- MARKET VALUE OF COMPUTER SERVICES COMPANIES
- PROFITABILITY
- ACQUISITIONS
- EUROPEAN VENDORS
- "INPUT 150" LARGEST U.S. COMPUTER SERVICES COMPANIES

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

I INTRODUCTION

INPUT DEVELOPMENTS

- NEW PEOPLE – OVER 60 PROFESSIONALS
- EXPANSION GEOGRAPHICALLY
- NEW SERVICES – PRODUCTIVITY
- NEW MARKETING – NEWSLETTER

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

I PALO ALTO, NEW YORK, LOS ANGELES, DETROIT, WASHINGTON, D.C., LONDON, TOKYO

⊙ AFFILIATES: MILAN, SYDNEY

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

SUBSCRIPTION SERVICES

- COMPUTER SERVICES PROGRAMS
  - MARKET ANALYSIS SERVICE
  - COMPANY ANALYSIS AND MONITORING PROGRAM
- OPERATED IN U.S. AND EUROPE
- OVER 60 CLIENTS

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

SUBSCRIPTION SERVICES

- FIELD SERVICES PROGRAMS FOR:
  - U.S. AND EUROPE
  - SOFTWARE AND HARDWARE MAINTENANCE
  - EDUCATION, TRAINING, AND SUPPORT
- 35 CLIENTS

SUBSCRIPTION SERVICES

- INFORMATION PROCESSING EXECUTIVE PROGRAM

  – PLANNING SERVICE
  – COMPUTER/COMMUNICATIONS TRENDS
  -- MANAGEMENT ISSUES

- U.S. AND EUROPE (1981)

- 60 CLIENTS

  – USERS
  – VENDORS

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

1980 MULTICLIENT STUDIES

- USER SITE HARDWARE SERVICES
- PERSONAL COMPUTERS IN LARGE COMPANIES
- STRATEGIES FOR COMPETING IN THE IBM COMPATIBLE MARKET
- DIGITAL COMMUNICATIONS NETWORKS
- IMPROVING PRODUCTIVITY OF SOFTWARE IMPLEMENTATION

1980 MULTICLIENT STUDIES

- CAD/CAM OPPORTUNITIES
- SALES PRODUCTIVITY AND ALTERNATIVE DISTRIBUTION CHANNELS
- ON-LINE DATA BASE OPPORTUNITIES IN EUROPE

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

1980 CUSTOM PROJECTS

- OVER 70 PROJECTS COMPLETED
- DIVERSIFICATION AND ACQUISITION PLANNING
- MARKETS FOR PRODUCTS AND SERVICES
- FIELD SERVICES MANAGEMENT AND MARKETING
- CAD/CAM PROJECTS
- EXECUTIVE BRIEFINGS AND CONSULTING

1980 MARKET ANALYSIS SERVICES STUDIES

- TRENDS IN SERVICE AND SOFTWARE PRICING
- TRENDS IN REMOTE COMPUTING SERVICES MODES
- OPPORTUNITIES IN INSURANCE AGENTS AND BROKERS
- MARKETING APPLICATION SOFTWARE PRODUCTS
- MARKET OPPORTUNITIES FOR ON-LINE DATA BASE SERVICES
- IMPROVING SALES PRODUCTIVITY
- EFFECTIVE MARKETING AND PLANNING

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

1980 MARKET ANALYSIS SERVICES
STANDARD SERVICES

- ANNUAL REPORT
- CONFERENCE
- 'HOT-LINE' SERVICE
- IN-HOUSE PRESENTATION

1981 MARKET ANALYSIS SERVICE STUDIES

- CONTINUING REPORTS
  - PRICING
  - COMPENSATION
  - END USER ANALYSIS
- THREE MAJOR REPORTS
- FOUR COMPUTER SERVICES BRIEFS
- ON-LINE DATA BASE MARKETS WILL BE COVERED

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

II EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

- COMPUTER SERVICES INDUSTRY CONTINUES TO PROVIDE A UNIQUE OPPORTUNITY

- TARGET ACCOUNT CONTROL

  – CONTINUING CLIENT RELATIONSHIP

  – FULL-LINE VENDOR

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

EXECUTIVE SUMMARY

- 'OLD' SERVICES DYING OR CHANGING
- EXPAND SERVICES INTO NEW AREAS
- PARTICIPATE IN NEW BUSINESS METHODS
  - FINANCIAL INDUSTRY
  - INFORMATION INDUSTRY
  - MANUFACTURING

EXECUTIVE SUMMARY

- EMPHASIZE PEOPLE
- COMPUTER SERVICES AS ENHANCED CONSULTING

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

EXECUTIVE SUMMARY

- PRODUCTIVITY IMPROVEMENT PROGRAM
  - SALES
  - DEVELOPMENT
  - SUPPORT
  - MANAGEMENT
- PRODUCTIVITY IMPROVEMENT MARKET

EXECUTIVE SUMMARY
TARGETS

- OPERATIONS ACTIVITIES
- SMALLER COMPANIES
- INTER- AND INTRA-INDUSTRY SERVICES
- COMPUTER AIDED PROCESSES
  - CAD/CAM
  - INSTRUCTIONS
  - COMMUNICATIONS
- FIELD SERVICES

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

EXECUTIVE SUMMARY

- TAKE ADVANTAGE OF TECHNOLOGICAL CHANGE
- USE MINI-MICRO SYSTEMS TO DELIVER SERVICES
- INTEGRATION OF NETWORKS PROVIDES OPPORTUNITIES
- NEW PROCESSING OPPORTUNITIES

– MESSAGE	– VOICE
– IMAGE	– VIDEO

EXECUTIVE SUMMARY

- PROCESSING DISTRIBUTED
  - VERY SMALL SYSTEMS
  - TURNKEY SERVICES
- DATA BASES KEYS TO BUSINESS OPPORTUNITIES

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

EXECUTIVE SUMMARY

- END USERS NEED TOOLS
- USERS WANT CUSTOMIZATION
- THEY WILL GET IT
- APPLICATIONS SOFTWARE MUST EVOLVE

EXECUTIVE SUMMARY

- RAPID EUROPEAN GROWTH
- SEVERAL YEARS BEHIND U.S. IN PROCESSING
- AHEAD IN SOME AREAS
- TRANS-NATIONAL MARKETS
  - CAD/CAM
  - DATA BASES
  - SYSTEMS SOFTWARE

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

EXECUTIVE SUMMARY

- ORGANIZING FOR SHORTAGE OF TRAINED PERSONNEL
- CONSOLIDATING ACQUISITIONS
- DEVELOPING MANAGEMENT

EXECUTIVE SUMMARY

- INVEST IN FUTURE
- AVOID OVEREMPHASIS ON SHORT TERM
- PLAN IN RECESSIONARY PERIOD

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

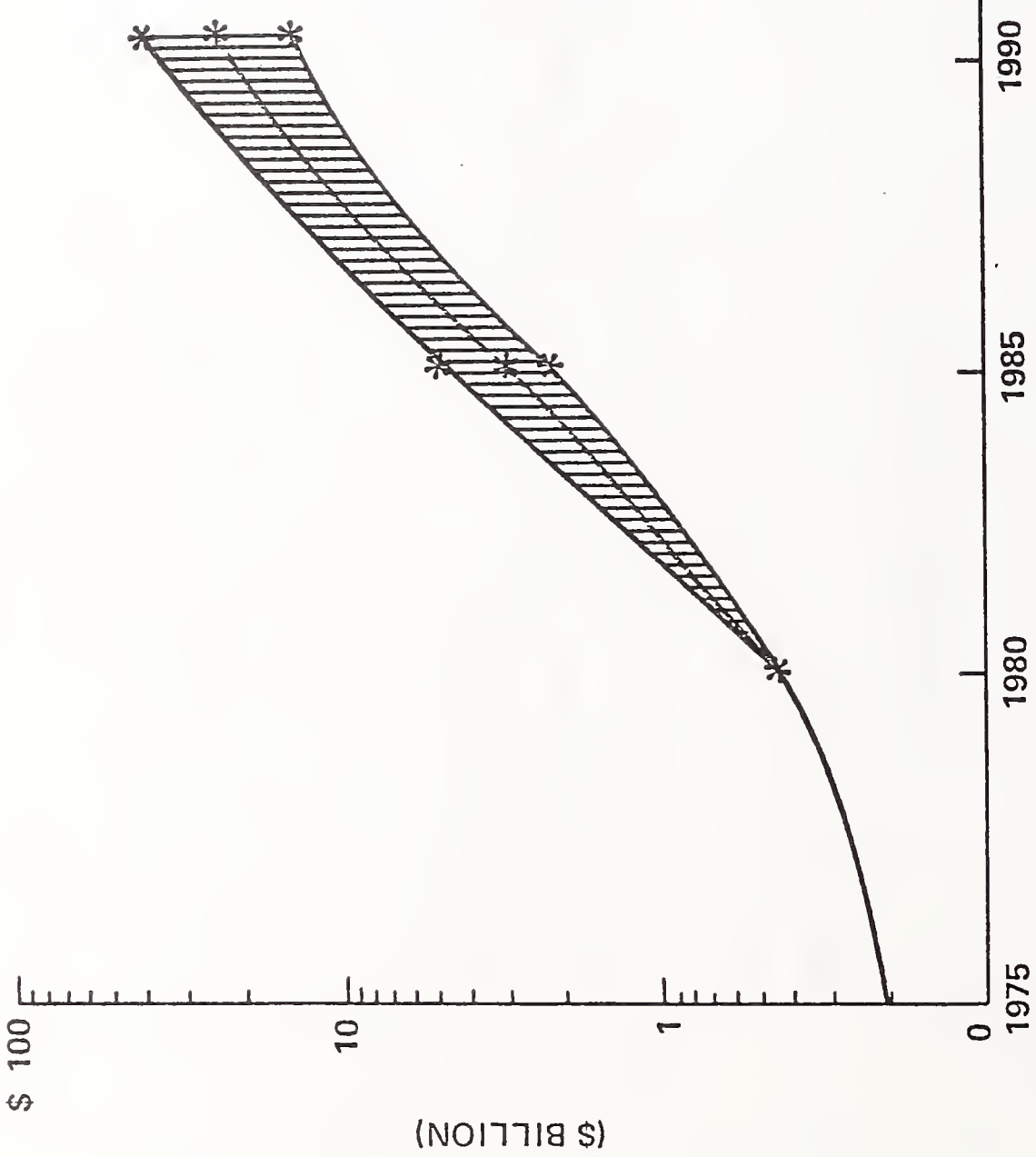
III OPPORTUNITIES

CAD/CAM MARKET

- PRODUCTIVITY ISSUE
- USER DEMAND > 10 X SUPPLY
- DELUGE OF NEW APPROACHES AND PRODUCTS
- CAD/CAM FUNDAMENTALLY ALTERS METHODS OF BUSINESS
- LONG-TERM COMMITMENT

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

CAD/CAM MARKET



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

CAD/CAM MARKET

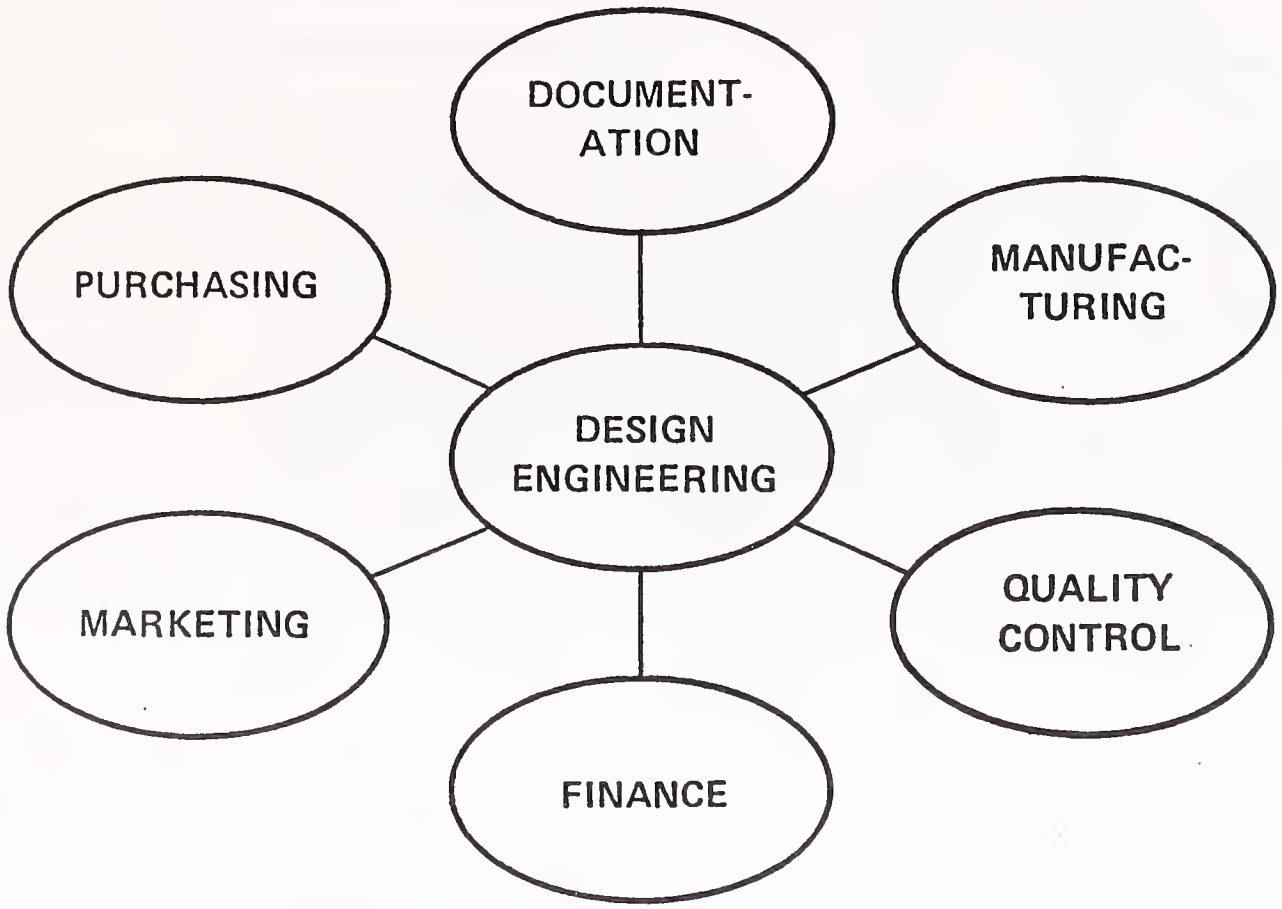
- USER EXPENDITURES IN ONE CAD ELECTRONICS AREA
  - 1980 $200 MILLION
  - 1985 $1.7 BILLION
- SOME APPLICATIONS EXPENDITURES WILL GROW 33 TIMES IN THIS AREA

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

CAD/CAM MARKET
BENEFITS

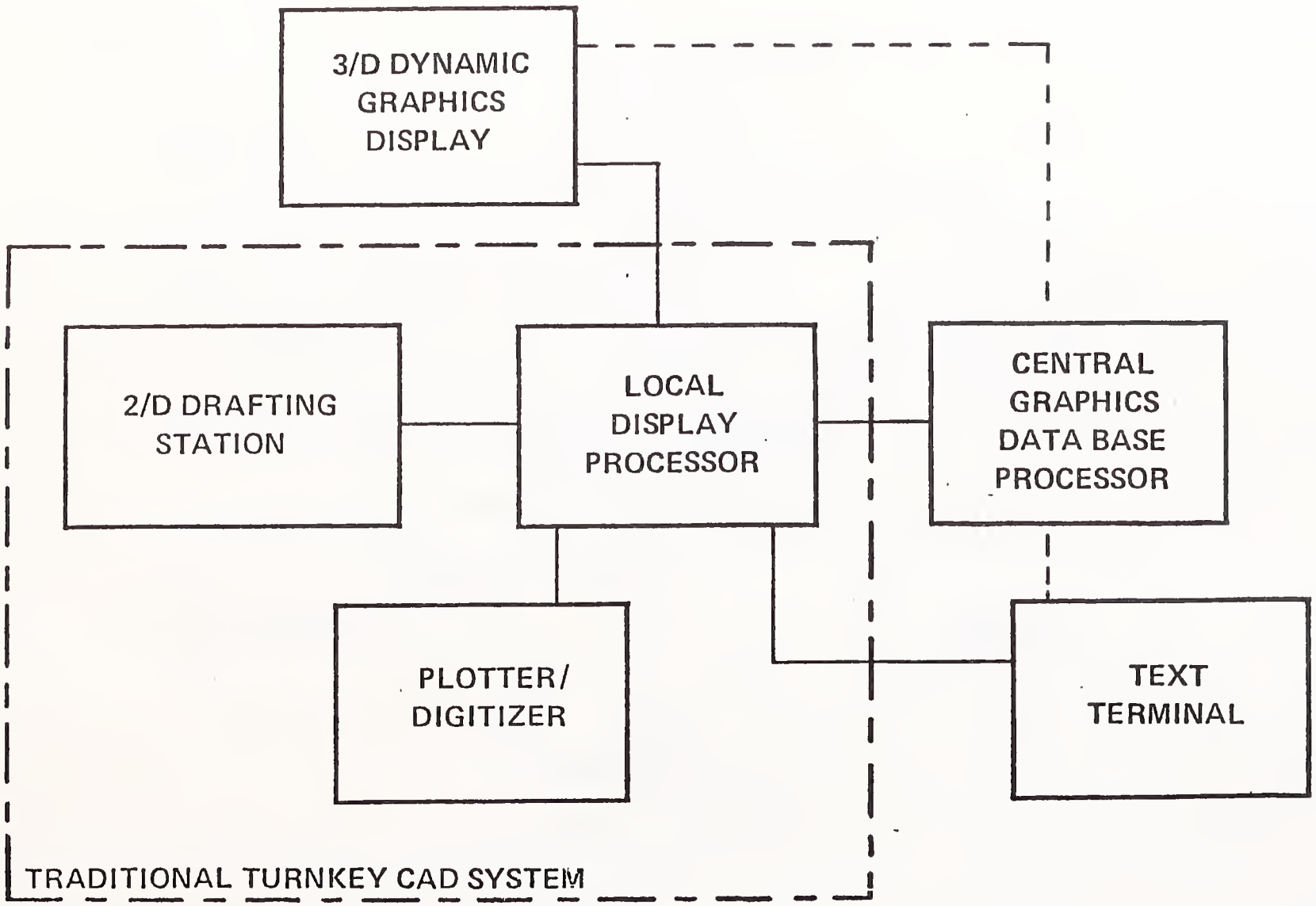
- INCREASED PRODUCTIVITY OF ENGINEERS
- SHORTER R&D CYCLE
- IMPROVED BIDDING AND SALES PROCESS
- IMPROVED USE OF MATERIALS
- STANDARDIZATION AND MORE FLEXIBILITY
- ELIMINATES PAPER

CAD/CAM MARKET
ROLE OF CAD/CAM



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

CAD/CAM MARKET
LOCAL VS. CENTRAL INTELLIGENCE



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

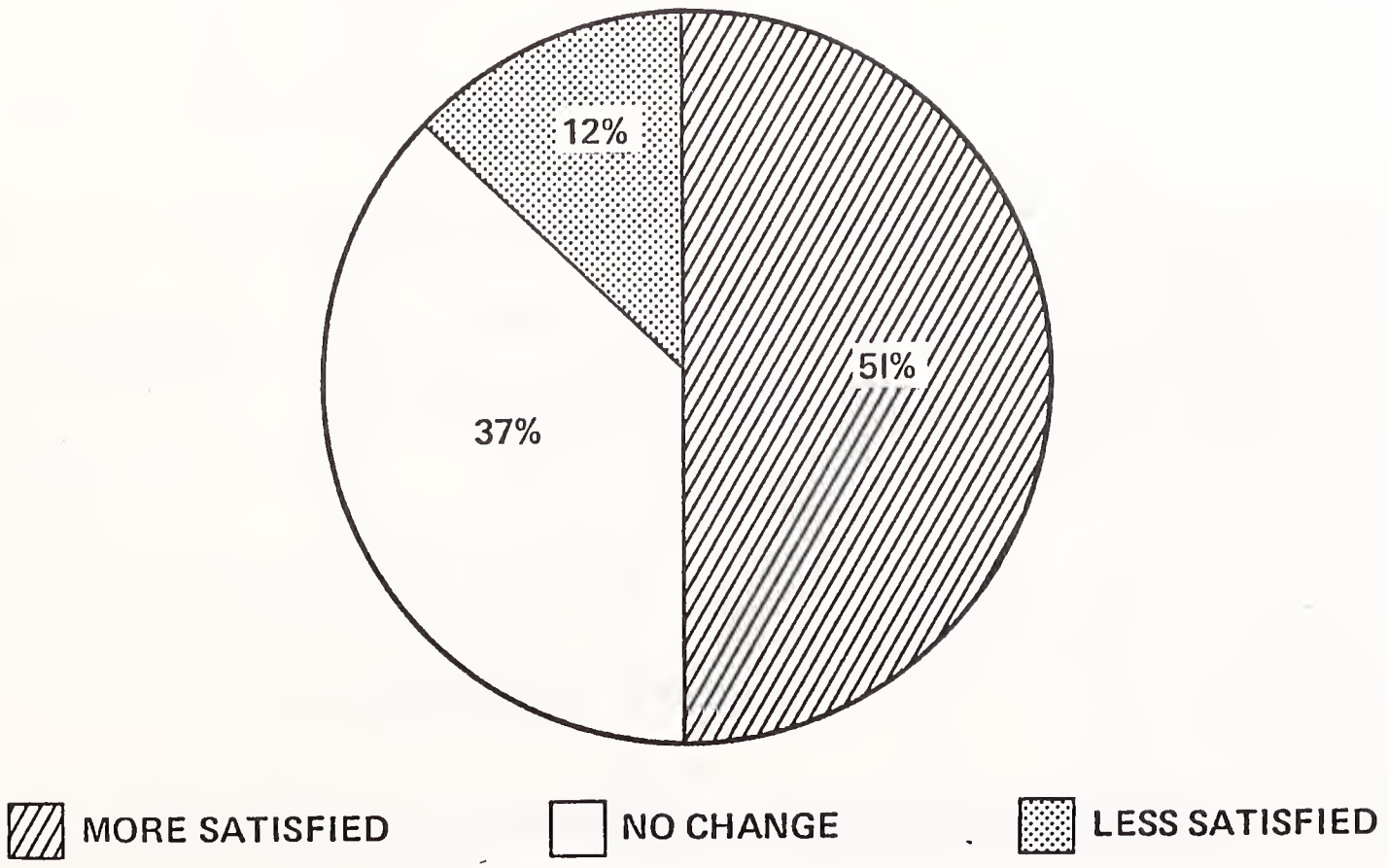
PERSONAL COMPUTERS IN LARGE COMPANIES

- PURCHASE PRICE < $15,000
- 'LARGE' COMPANIES = FORTUNE 500/50
- MOST SYSTEMS ARE SHARED
- EDP DEPARTMENT ATTITUDES ARE CRITICAL
- DEPARTMENT SIZE AFFECTS SYSTEM PRICE
- EXTERNAL RCS WILL BE AFFECTED

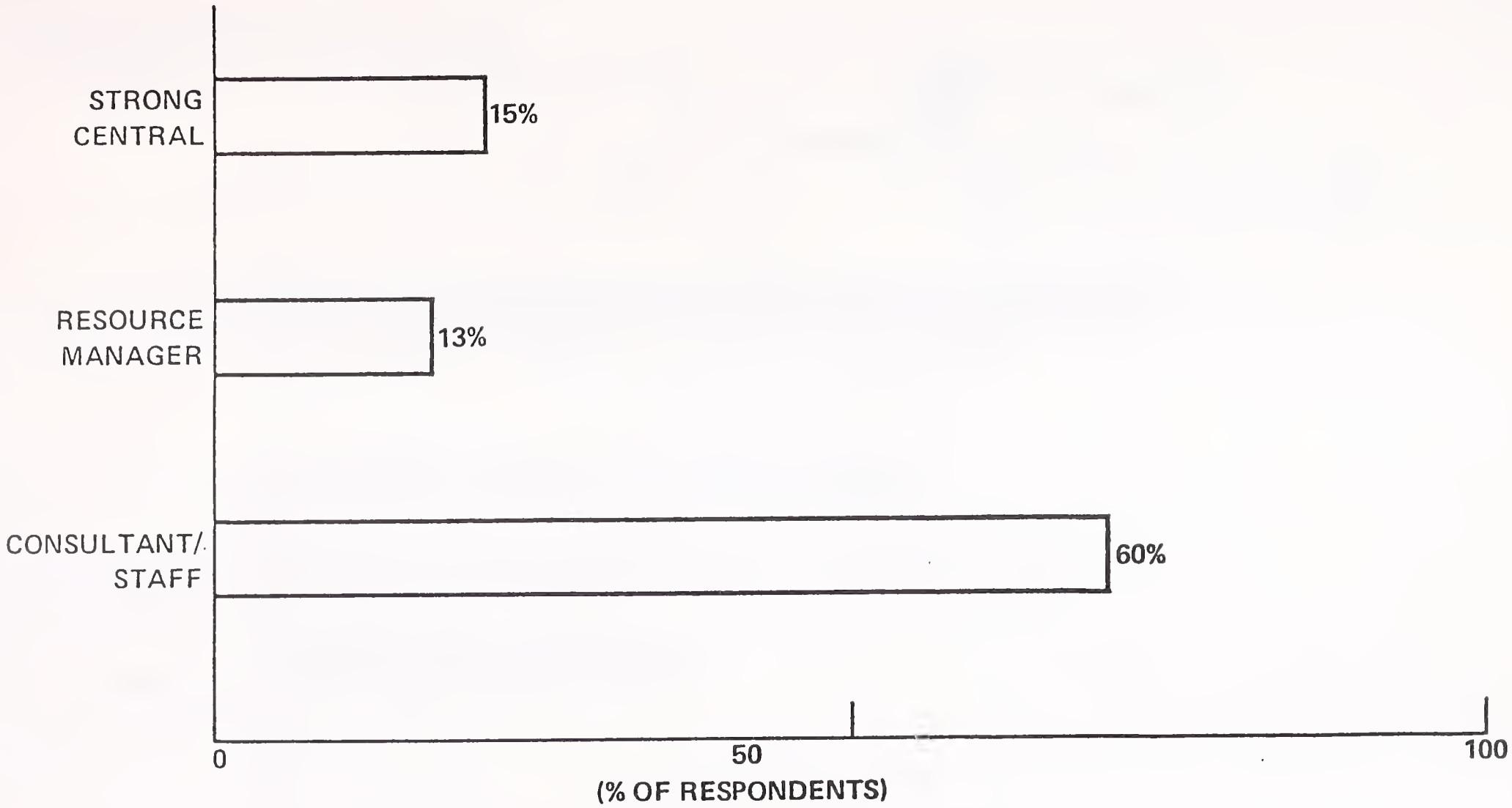
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

END USER SATISFACTION WITH EDP
CHANGE FROM LAST YEAR



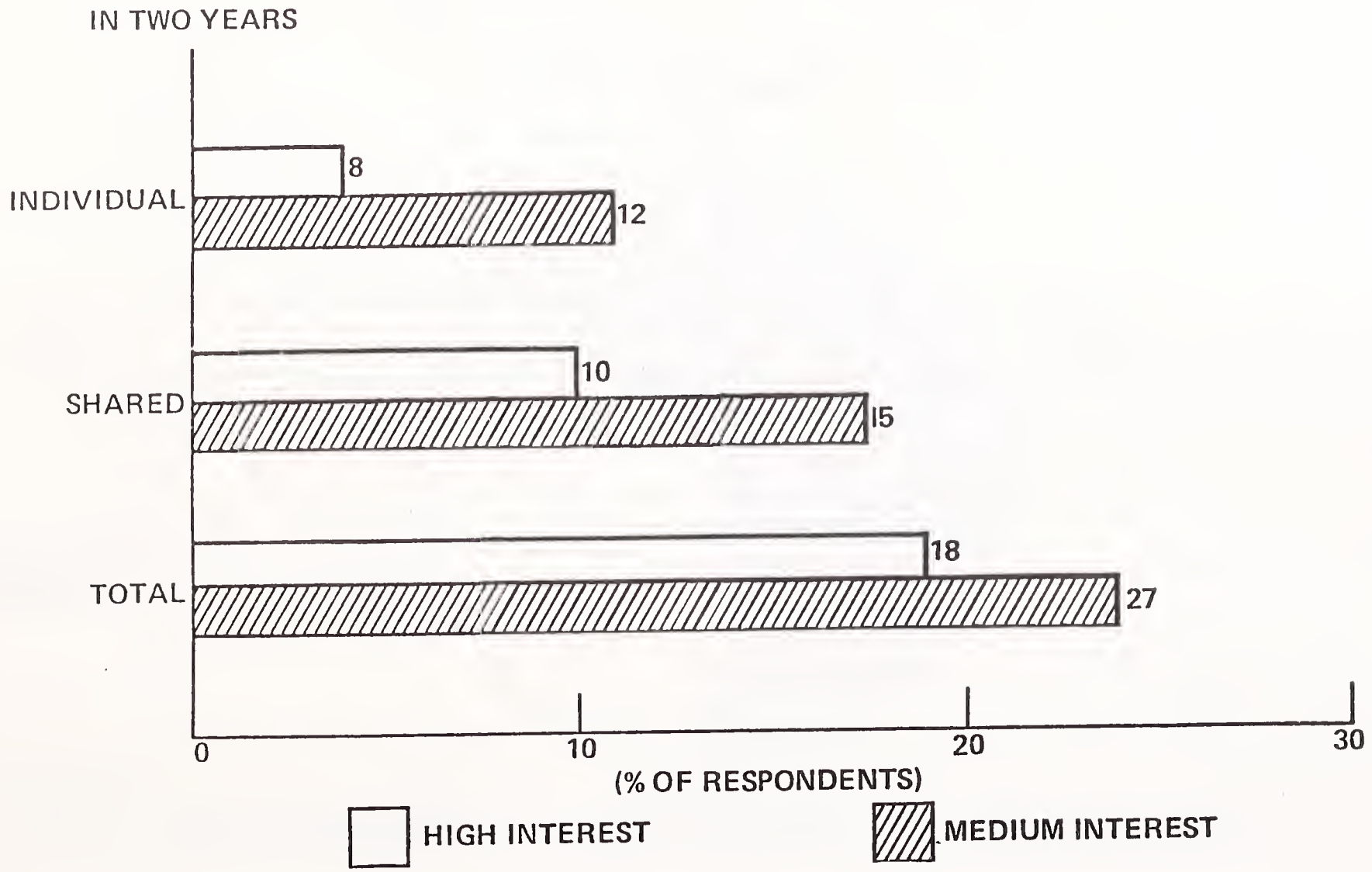
PERSONAL COMPUTERS IN LARGE COMPANIES
FUTURE ROLE OF THE EDP DEPARTMENT



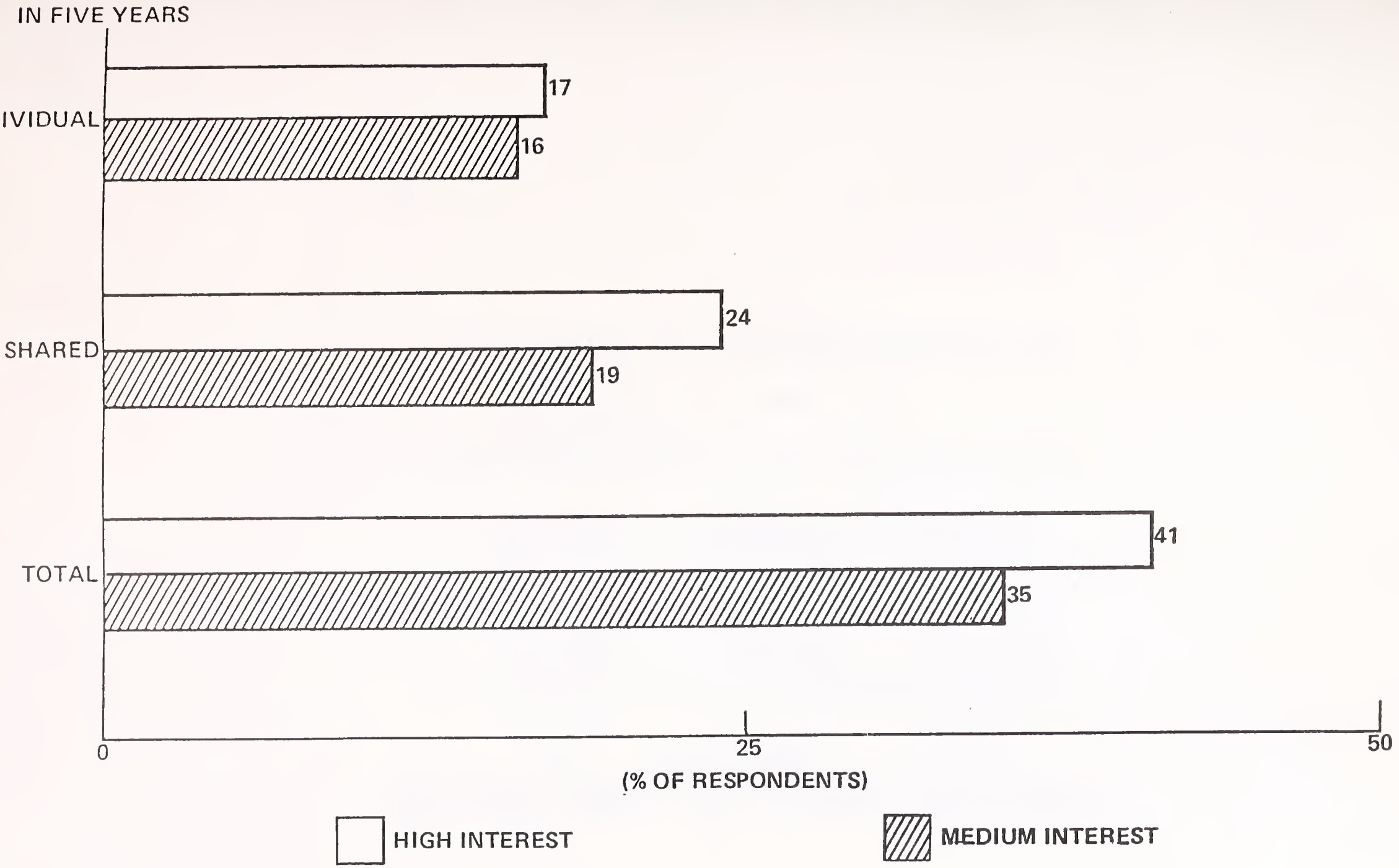
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

PERSONAL COMPUTERS IN LARGE COMPANIES
PURCHASE INTEREST OF END USERS



PERSONAL COMPUTERS IN LARGE COMPANIES
PURCHASE INTEREST OF END USERS



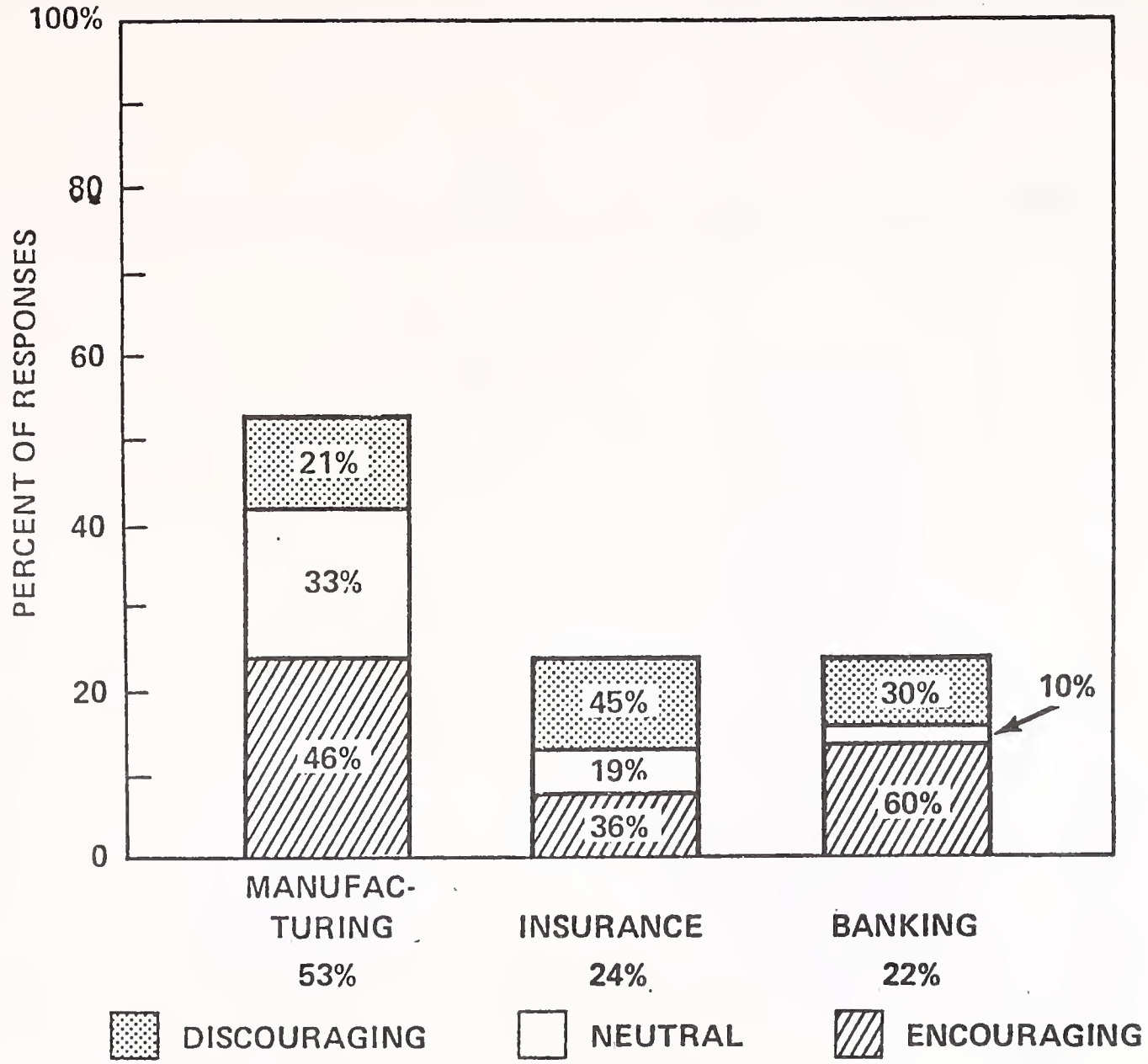
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

PERSONAL COMPUTERS IN LARGE COMPANIES
SOFTWARE

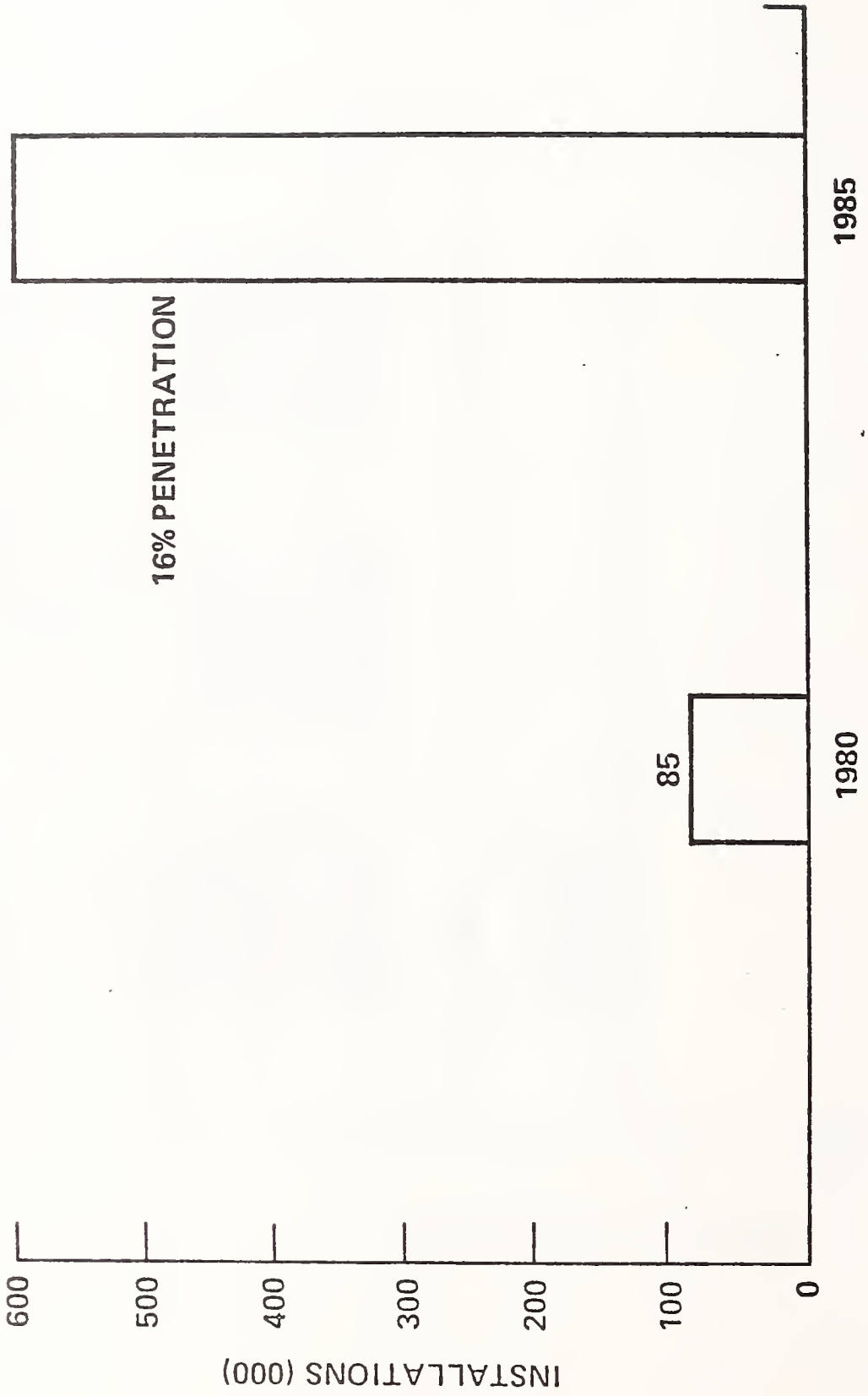
- APPLICATIONS SOFTWARE INDEPENDENT OF EDP DEPT.
  - OVER 50% FROM USER DEPT.
  - OVER 30% FROM EXTERNAL SOFTWARE SUPPLIER
- USERS PRIMARILY RESPONSIBLE FOR MAINTENANCE
- PROGRAMMERS AT USER SITES IN 60% OF RESPONDENTS
- APPLICATIONS DEMAND TYPICAL OF RCS
- PLANNING/FORECASTING AND GRAPHICS RATED HIGH

EDP DIRECTORS' ATTITUDES



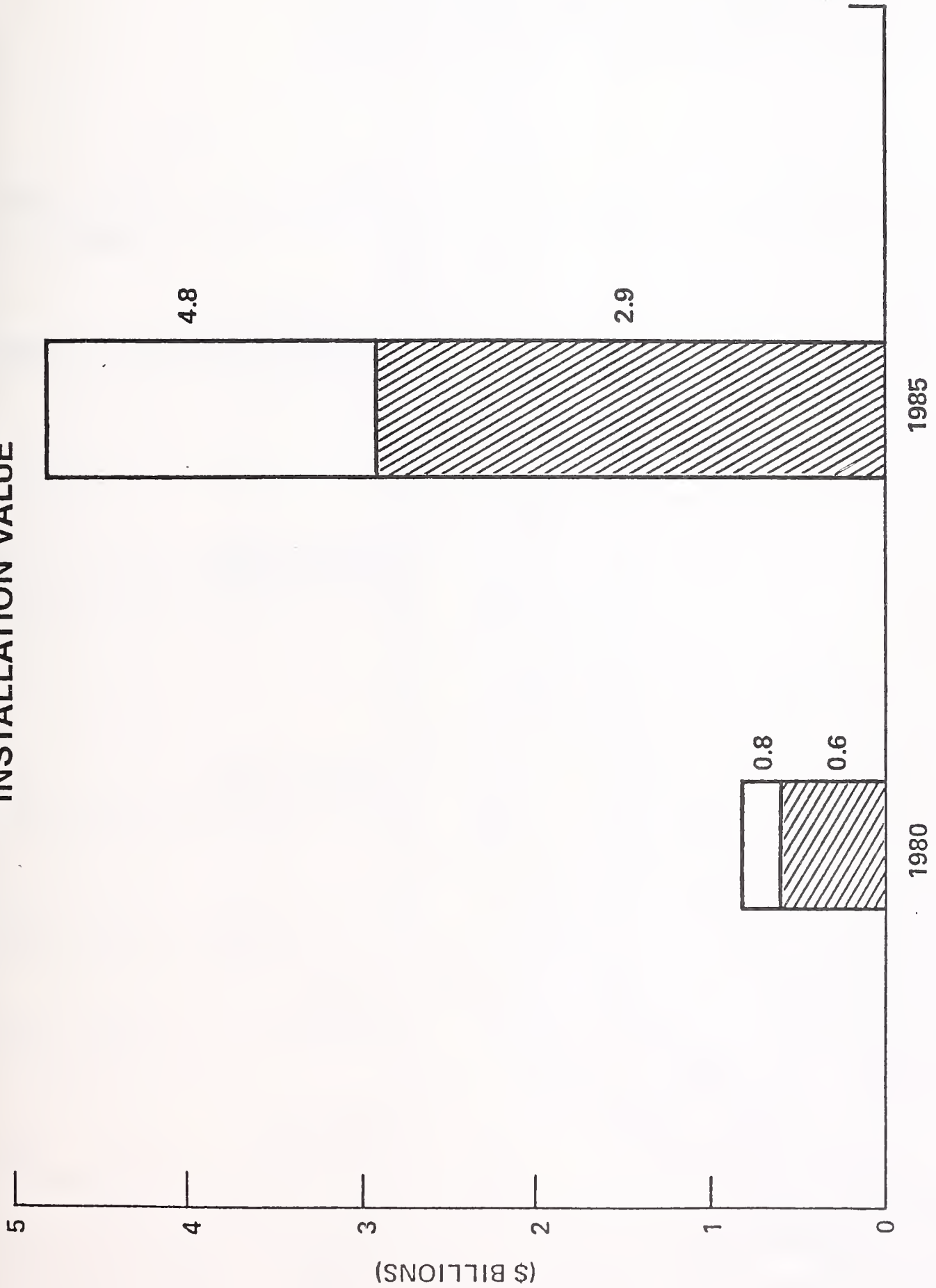
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

PERSONAL COMPUTERS IN LARGE COMPANIES
NUMBER OF INSTALLATIONS



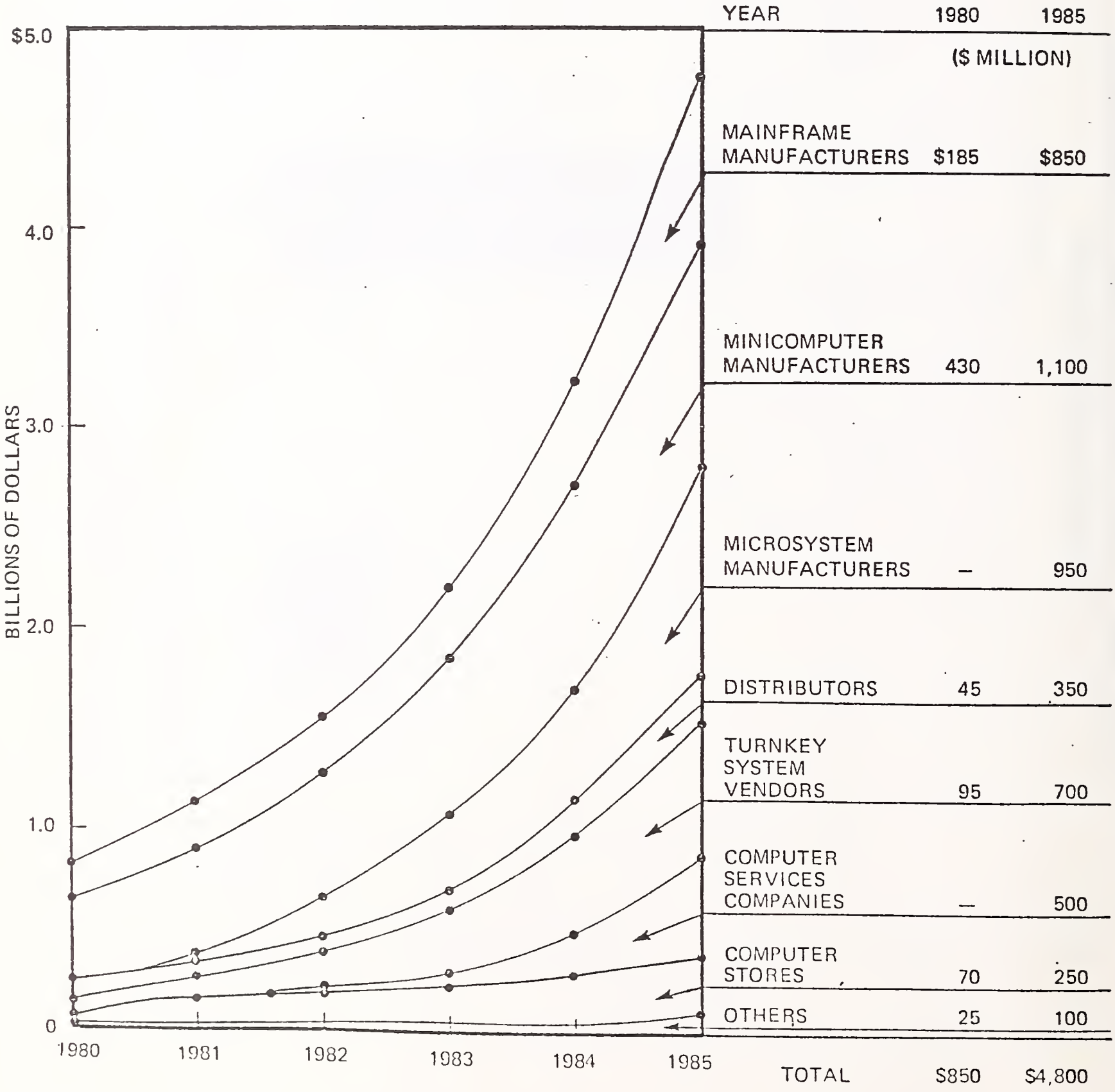
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

PERSONAL COMPUTERS IN LARGE COMPANIES
INSTALLATION VALUE



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

MARKET SHARE BY VENDOR TYPE, 1980-1985 FORECAST

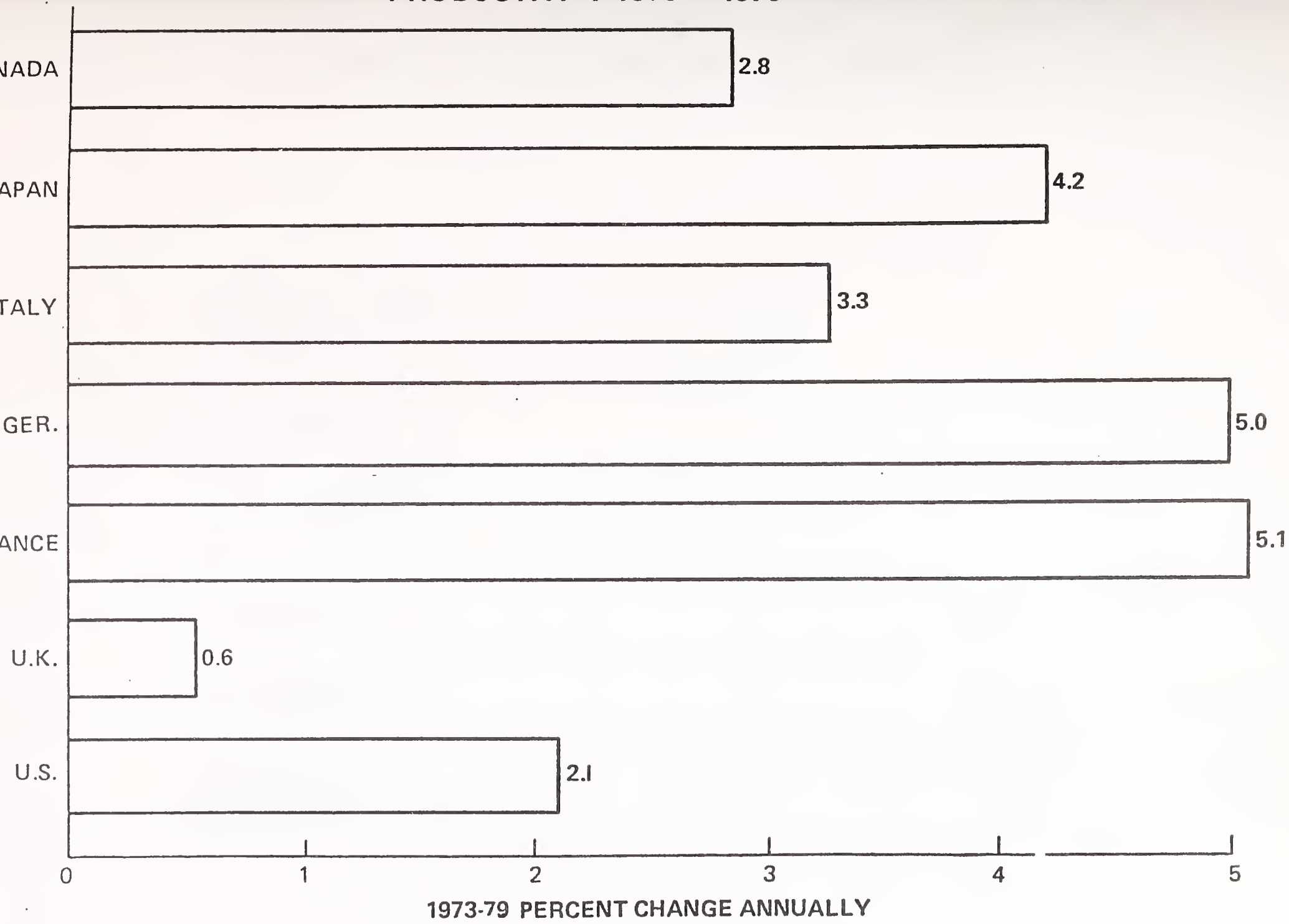


YEAR	1980	1985
	($ MILLION)	
MAINFRAME MANUFACTURERS	$185	$850
MINICOMPUTER MANUFACTURERS	430	1,100
MICROSYSTEM MANUFACTURERS	—	950
DISTRIBUTORS	45	350
TURNKEY SYSTEM VENDORS	95	700
COMPUTER SERVICES COMPANIES	—	500
COMPUTER STORES	70	250
OTHERS	25	100
TOTAL	$850	$4,800

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

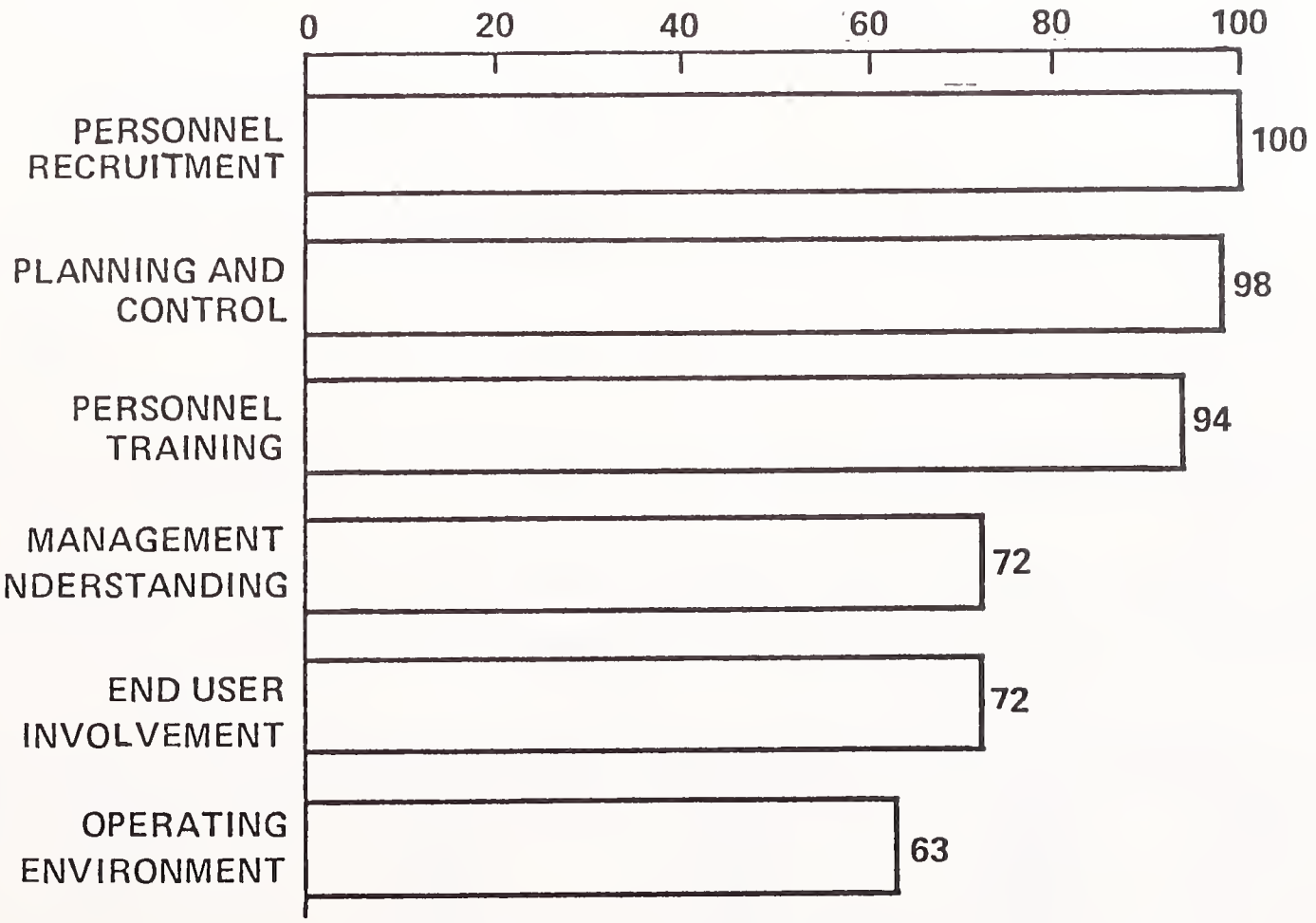
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

PRODUCTIVITY 1973 - 1979



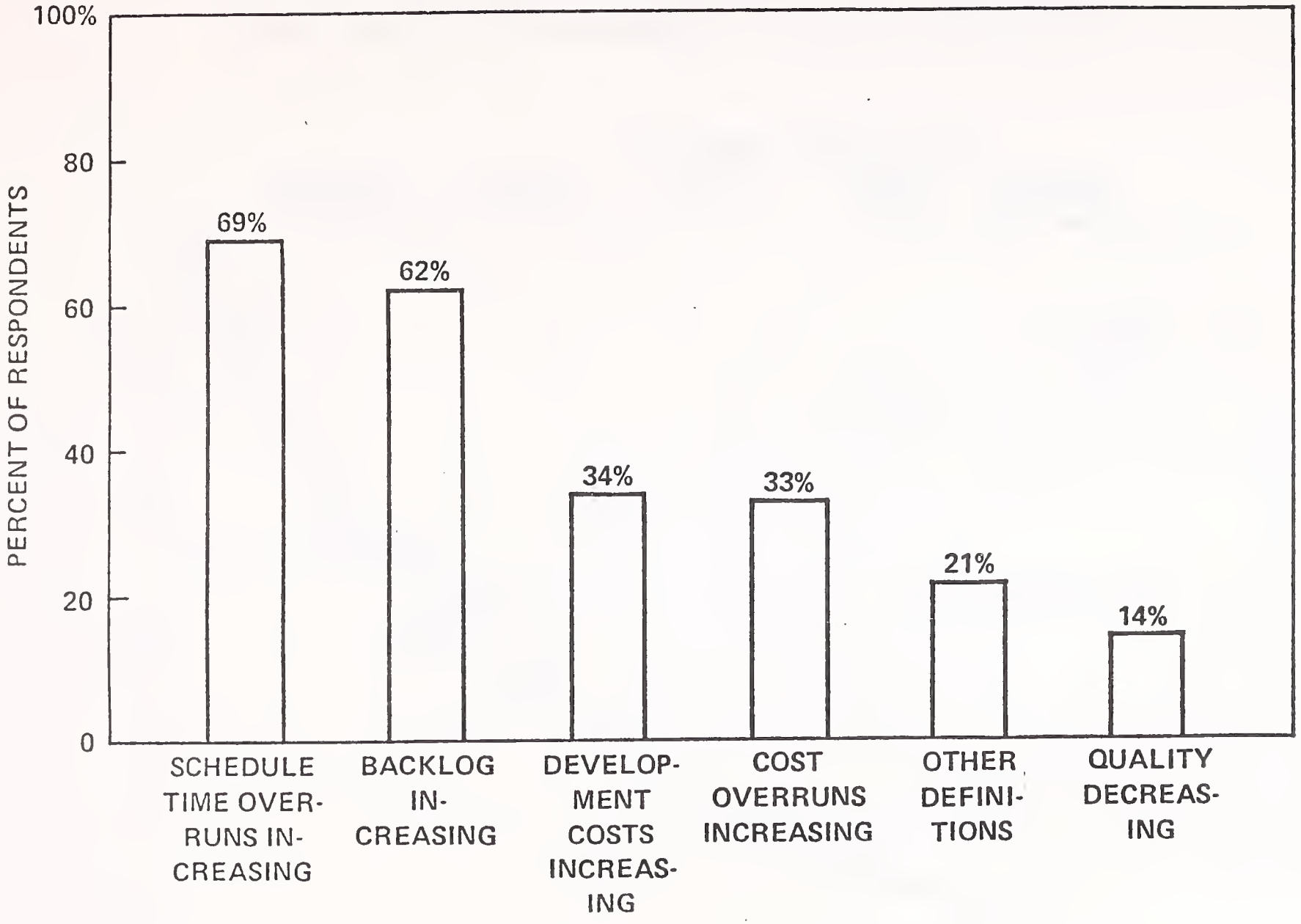
PRODUCTIVITY

RELATIVE IMPORTANCE OF EDP PROBLEMS



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

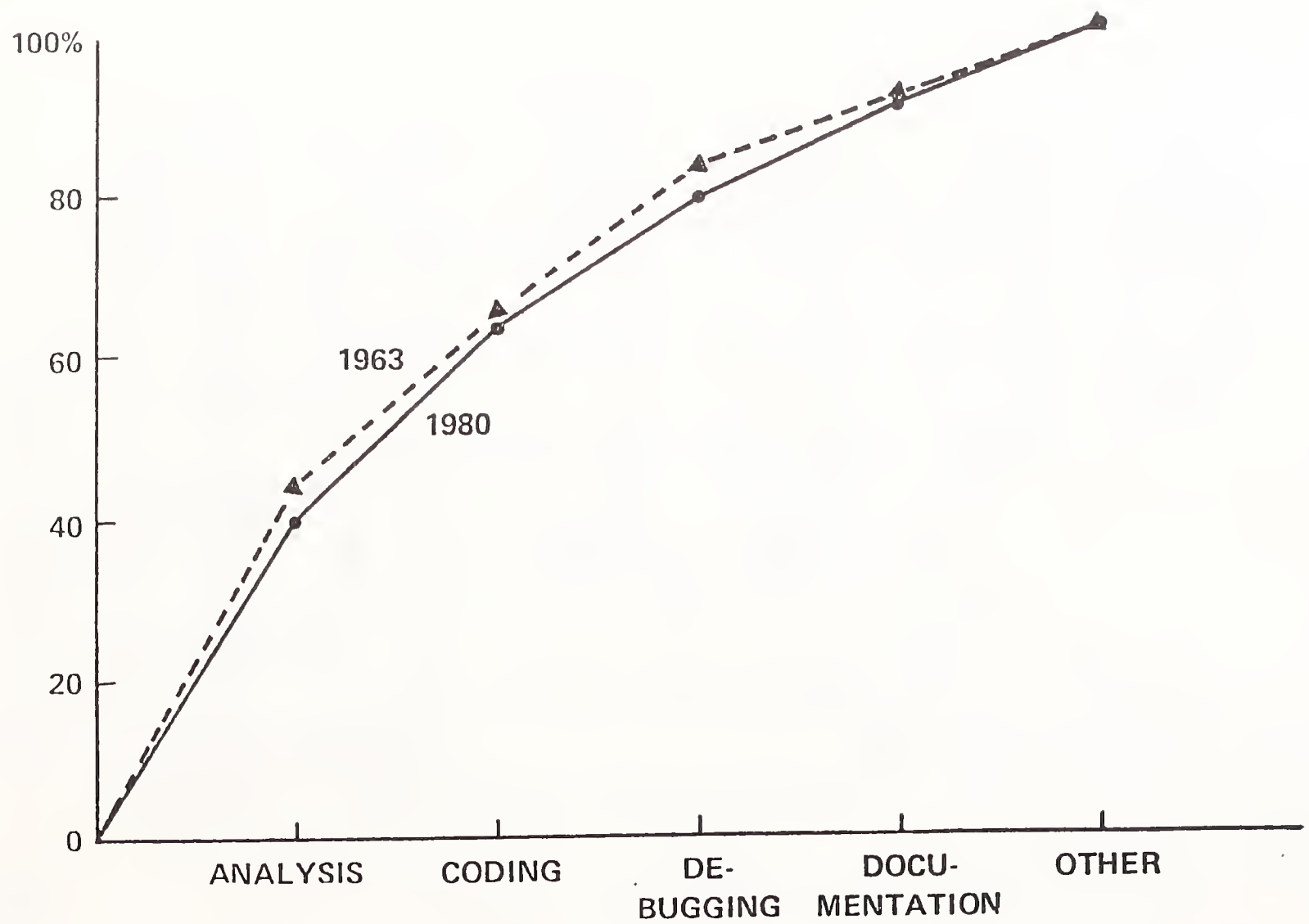
PRODUCTIVITY
SYSTEMS & SOFTWARE PRODUCTIVITY PROBLEMS



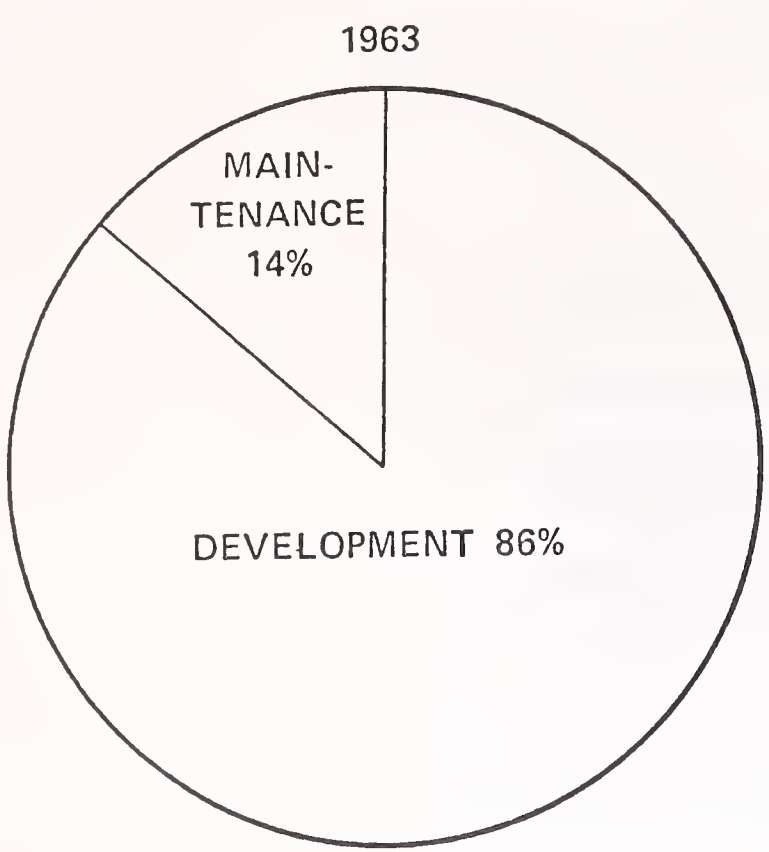
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

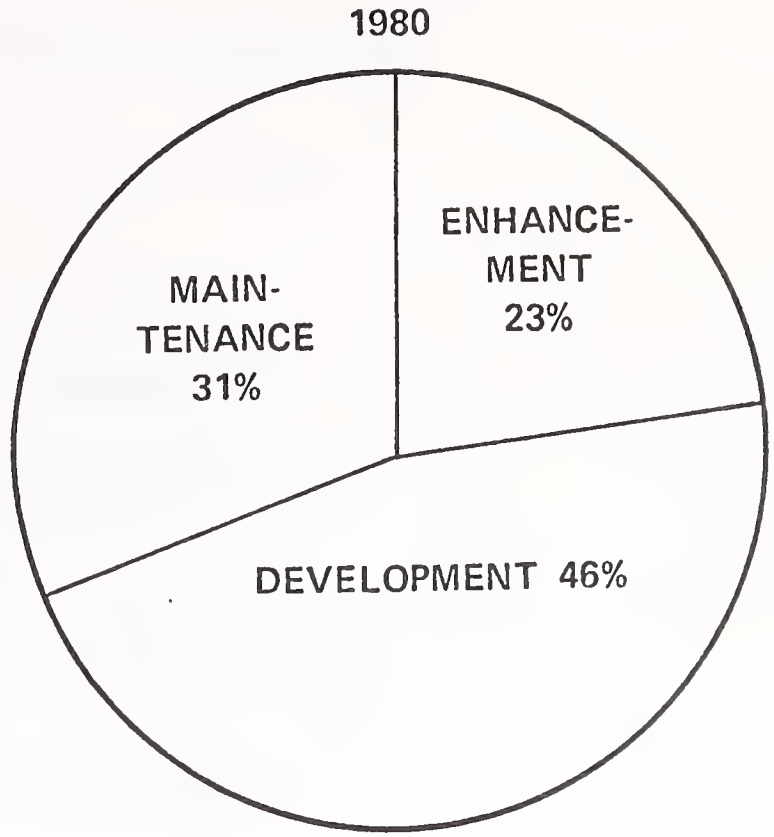
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

PRODUCTIVITY
TIME USAGE IN SYSTEMS DEVELOPMENT



PRODUCTIVITY
APPLICATION PROGRAMMER TIME DISTRIBUTION





© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

PRODUCTIVITY
USEFUL PRODUCTIVITY MEASUREMENTS

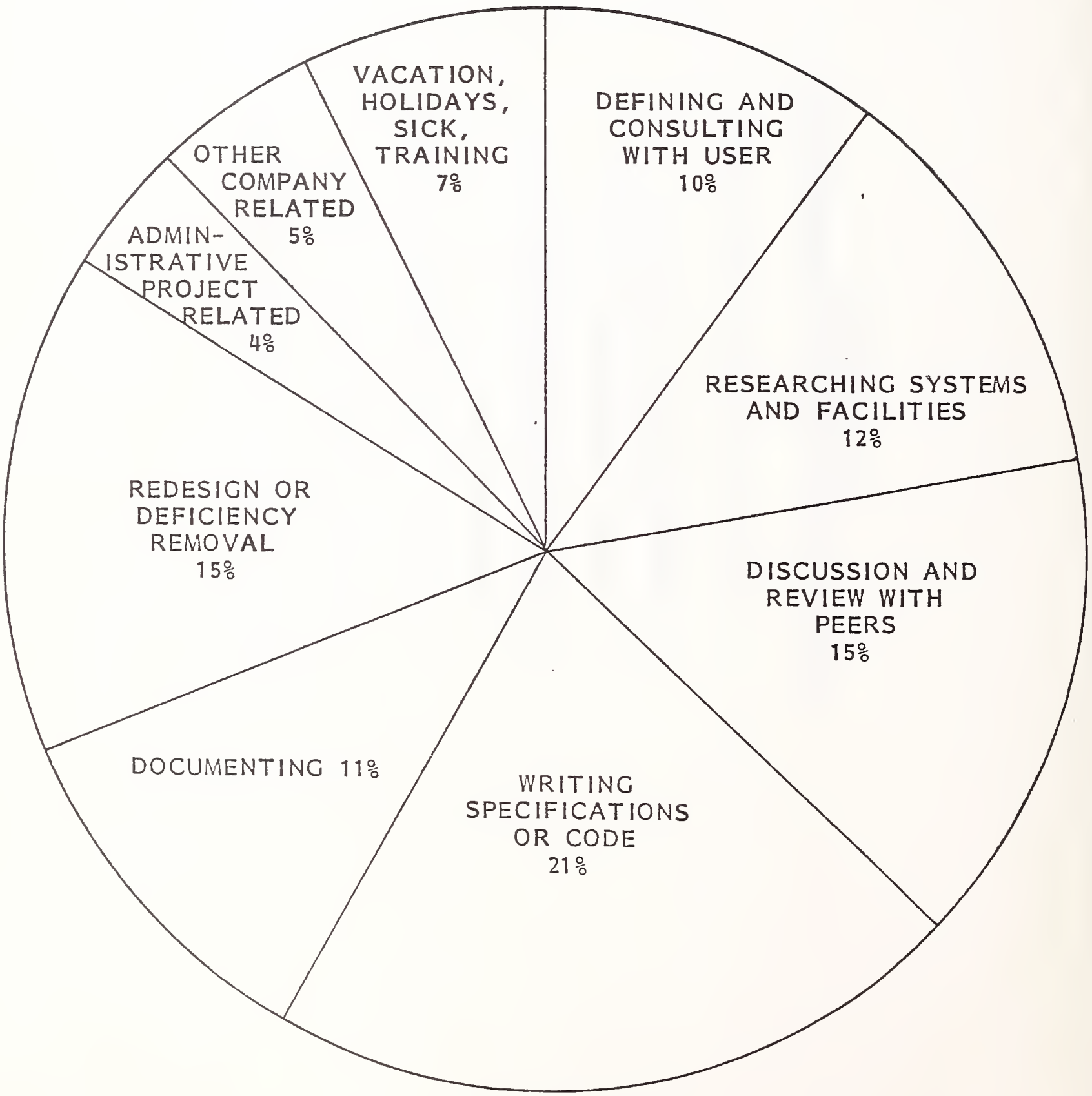
- NUMBER OF MODULES COMPLETED
- PERCENT OF TASKS COMPLETED ON TIME
- EXPENDITURE VERSUS BUDGET
- LINES OF NEW CODE PER UNIT OF TIME
- COST PER THOUSAND LINES OF CODE
- COST PER FUNCTION

PRODUCTIVITY
USEFUL PRODUCTIVITY MEASUREMENTS

- DEFECTS PER THOUSAND LINES OF CODE
- PERCENT OF DEFECTS REMOVED
- DEGREE OF USER SATISFACTION
- NON-PROJECT TIME/TOTAL TIME
- TURNOVER RATE

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

PRODUCTIVITY
ANALYST/PROGRAMMER TIME DISTRIBUTION


VACATION, HOLIDAYS, SICK, TRAINING 7%
DEFINING AND CONSULTING WITH USER 10%
OTHER COMPANY RELATED 5%
ADMIN-ISTRATIVE PROJECT RELATED 4%
RESEARCHING SYSTEMS AND FACILITIES 12%
REDESIGN OR DEFICIENCY REMOVAL 15%
DISCUSSION AND REVIEW WITH PEERS 15%
DOCUMENTING 11%
WRITING SPECIFICATIONS OR CODE 21%

NUMBER OF RESPONSES = 23

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

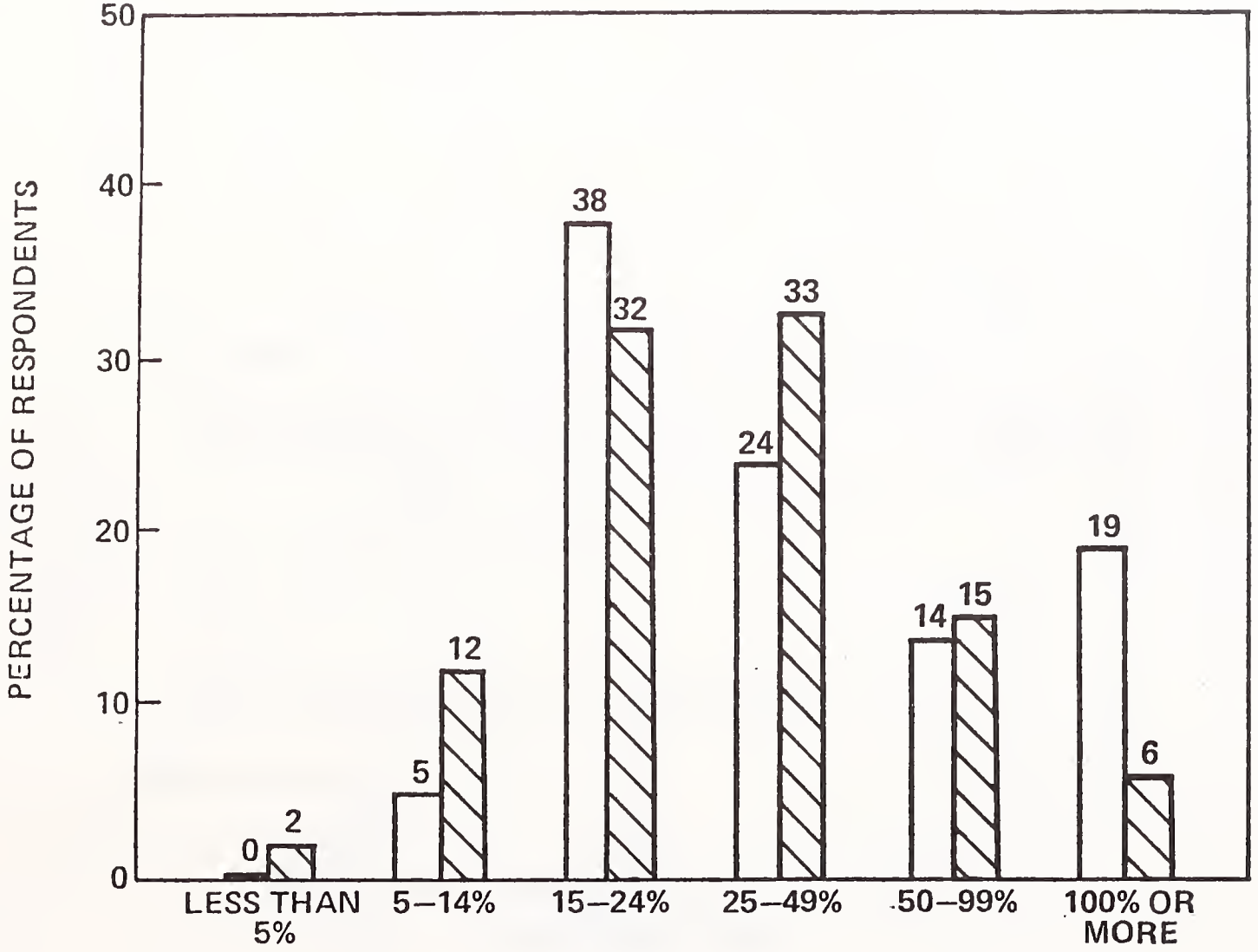
PRODUCTIVITY
CUMULATIVE "UNPRODUCTIVITY" IMPACT

GROSS TIME AVAILABLE	100%
LESS: ADMINISTRATIVE, HOLIDAYS, ETC.	- 15
LESS: WASTED TIME	- 10
LESS: MISDIRECTED TIME	- 25
LESS: COMPLEXITY ADJUSTMENT	-25 to - 45
NET EFFECTIVE TIME AVAILABLE, WORST CASE	5%

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

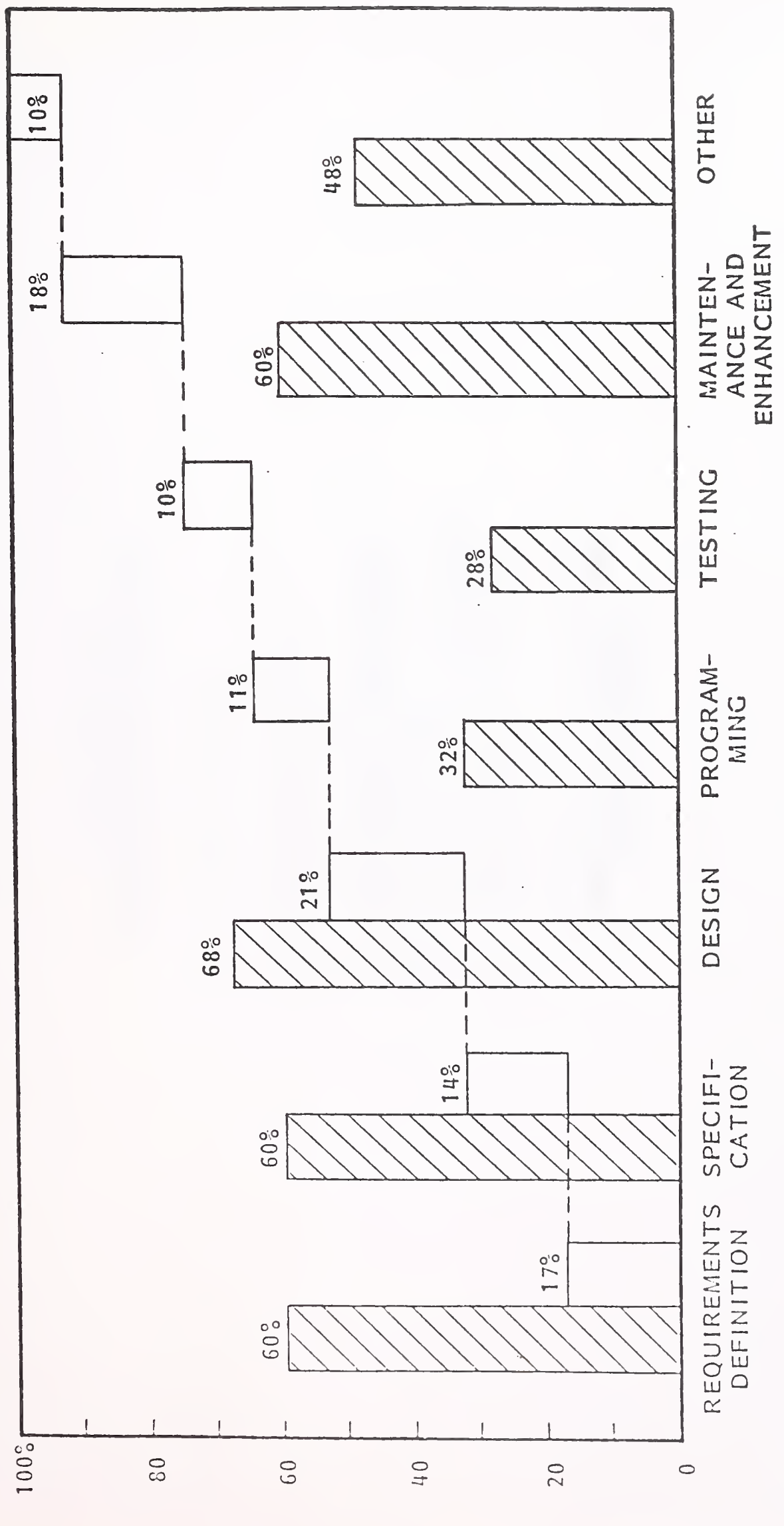
PRODUCTIVITY
NEEDED INCREASE IN SOFTWARE PRODUCTIVITY



ON-SITE NUMBER OF RESPONSES = 21

MAIL NUMBER OF RESPONSES = 284

SOURCES OF PRODUCTIVITY IMPROVEMENT



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

PRODUCTIVITY
EMERGING TECHNIQUES

- REQUIREMENTS LANGUAGES
- ORGANIZATIONAL TECHNIQUES
- PROGRAMMER'S WORKBENCH
- REUSABLE CODE

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

PRODUCTIVITY
EMERGING TECHNIQUES

- STRUCTURED ANALYSIS
- MENU-DRIVEN PROGRAMMING
- VERIFICATION AND VALIDATION METHODS
- MISCELLANEOUS AIDS

PRODUCTIVITY TOOLS

STAGE ZERO:	COBOL, FORTRAN, PL/I, BASIC, ASSEMBLER(!)
STAGE ONE:	TSO OR EQUIVALENT
STAGE TWO:	STRUCTURED DESIGN TECHNIQUES, DATA BASE-ORIENTED LANGUAGES
STAGE THREE:	AUTOMATED, INTEGRATED SET OF TOOLS, LIMITED DIRECT USER ACCESS
STAGE FOUR:	WIDESPREAD DIRECT USER ACCESS, SELECT SOFTWARE BUILDING BLOCKS

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

PRODUCTIVITY INVESTMENT/PAYOFF

STAGE ZERO: UNCONTROLLED COSTS

STAGE ONE: BEGINNING TO CONTROL COSTS, CONSCIOUS INVESTMENT IN IMPROVEMENT TECHNIQUES

STAGE TWO: CONTINUED INVESTMENT

STAGE THREE: EMERGING PAYOFF

STAGE FOUR: SUBSTANTIAL PAYOFF

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

TELECOMMUNICATIONS

- TOTAL EXPENDITURES ≡ EDP EXPENDITURES
- NETWORKS DESIGNED FROM AVAILABLE SOLUTIONS
- CURRENT SOLUTIONS HARDWARE ORIENTED
- LOCAL NETWORKS EMERGING RAPIDLY
- BARRIERS BREAKING DOWN

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

TELECOMMUNICATIONS

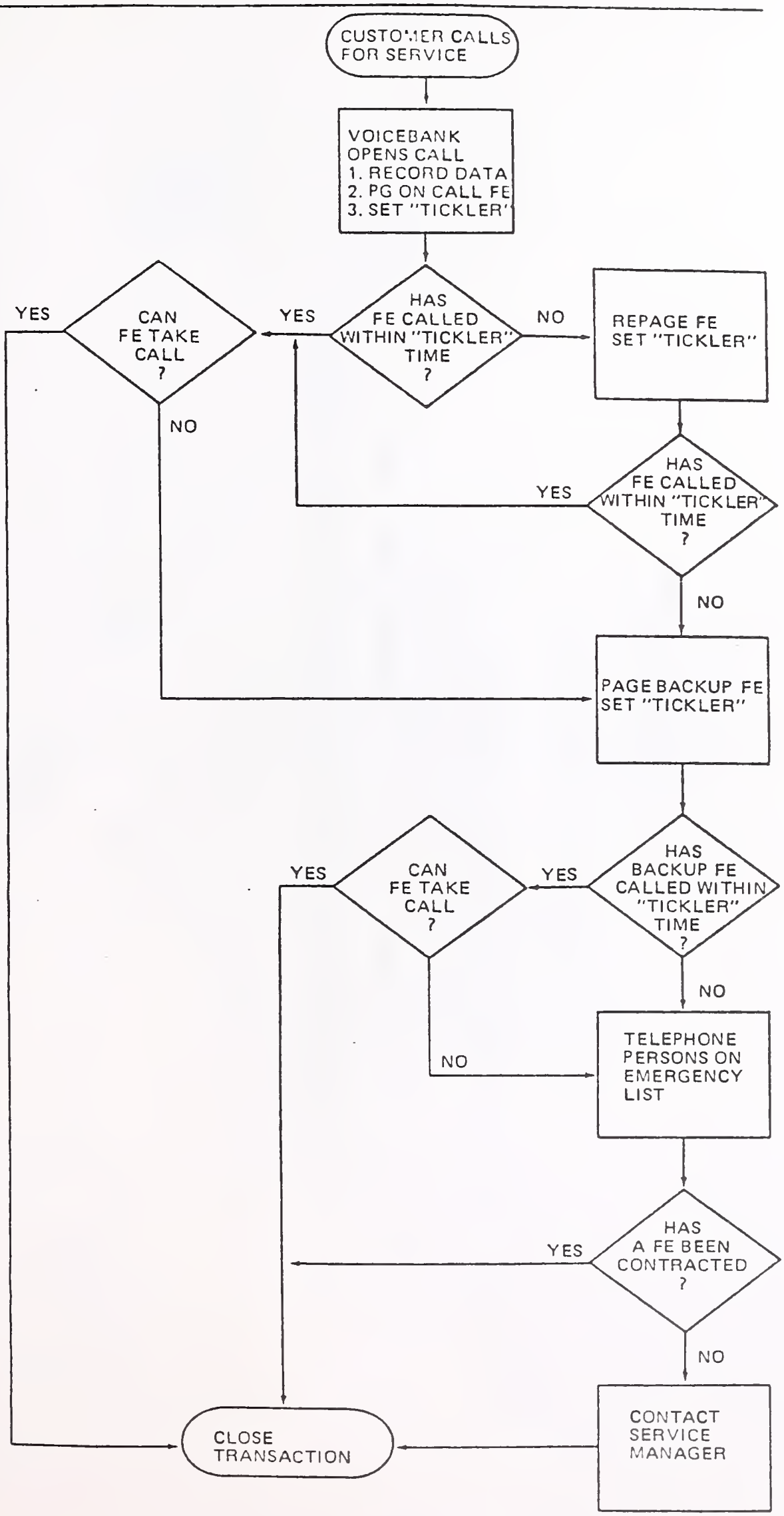
- INTEGRATION OF NETWORKS
  - SINGLE DATA NETWORK
  - INCLUDES DDP SUPPORT
  - INTEGRATION OF MESSAGE NOW
  - VOICE, IMAGE LATER
- DATA ONLY TRANSMISSION SERVICES IMPACTED NEGATIVELY

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

VOICE PROCESSING

- MAJOR TELECOMMUNICATIONS INTEREST
- TRANSMISSION FACILITIES ARE TUNED FOR VOICE
- DIGITIZING MAKES STORING/PROCESSING FEASIBLE
- STORE AND FORWARD IMPORTANT APPLICATION
- GETS RID OF PAPER
- SERVICES EMERGING:
  - VOICE PROCESSING BASED
  - ACTUAL VOICE (VOICE BANK)

VOICEBANK DISPATCH INFORMATION FLOW - LIMITED SERVICE



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

IMAGE PROCESSING

- IMAGE PROCESSING SYSTEMS HANDLE:
  - DOCUMENTS
  - CORRESPONDENCE/SIGNATURES
  - PICTURES, DIAGRAMS, AND GRAPHICS
- OPPORTUNITY TO INTEGRATE "MOVIES" AND "AUDIO" LATER
- PROVIDE MULTIPOINT ACCESS WITHOUT PHYSICAL MOVEMENT

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

VIPS-2000

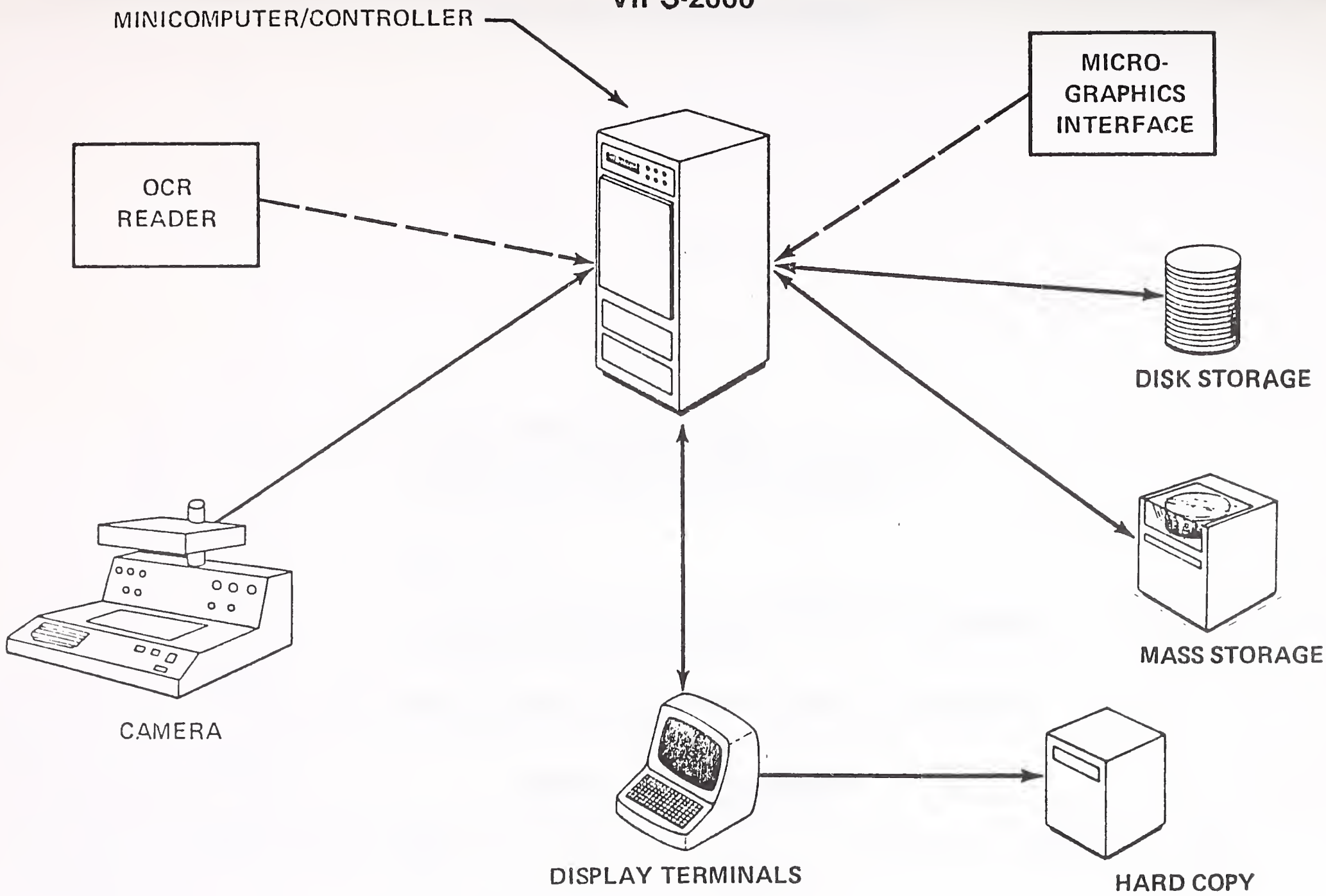
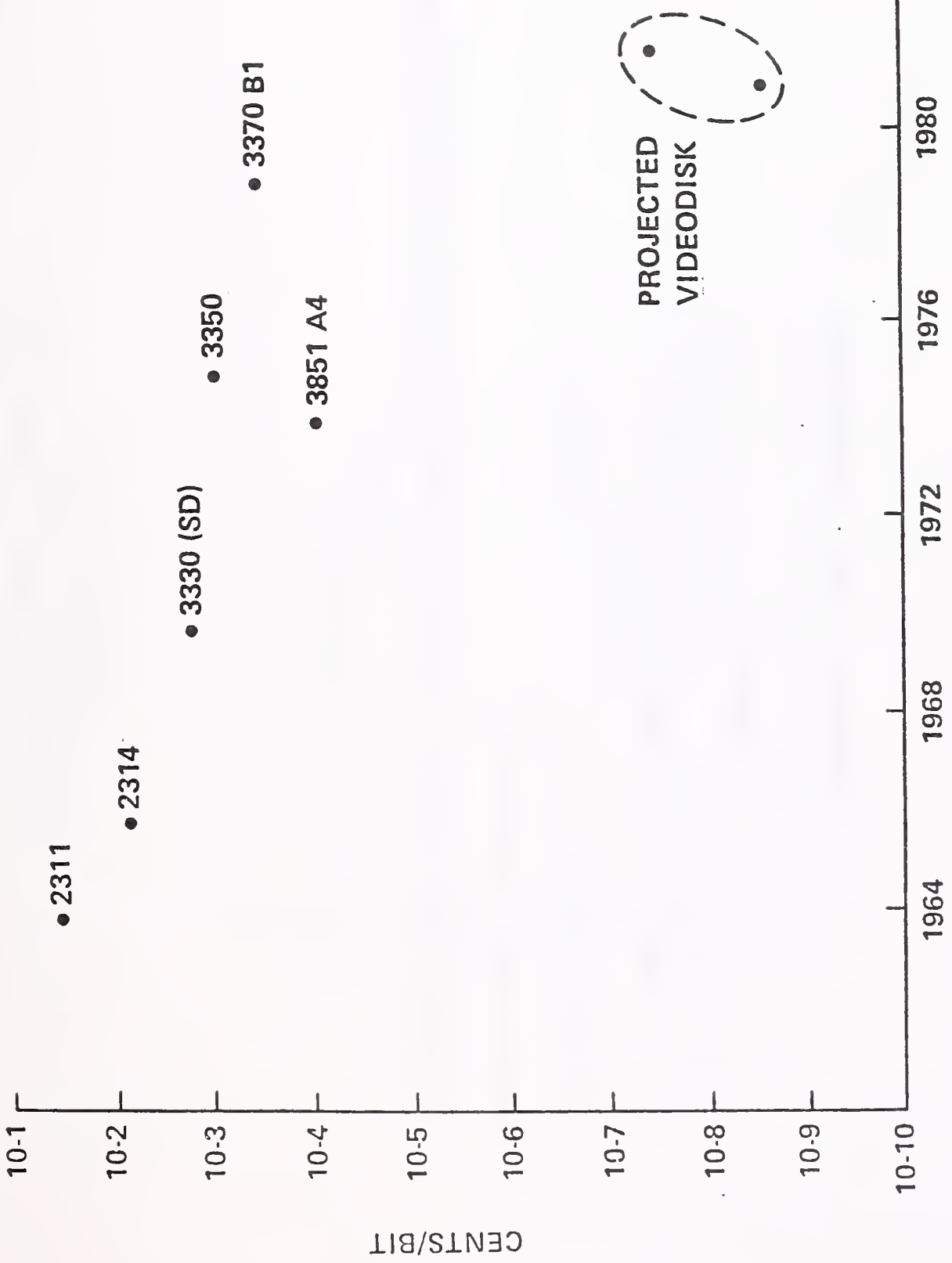


IMAGE PROCESSING

- MADE POSSIBLE BY OPTICAL STORAGE (VIDEO DISK)
  - ONE PACK HOLDS 10^{12} BITS
  - SYSTEMS PROJECTED ACCOMMODATING 10^{15} BITS
- 10^{15} BITS IS:
  - 50 MILES OF SHELF SPACE FOR BOOKS
  - 20 BILLION PAGES OF COMPUTER PRINTOUT
  - 3 MILLION MILES OF PAPER

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

ON-LINE STORAGE COSTS



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

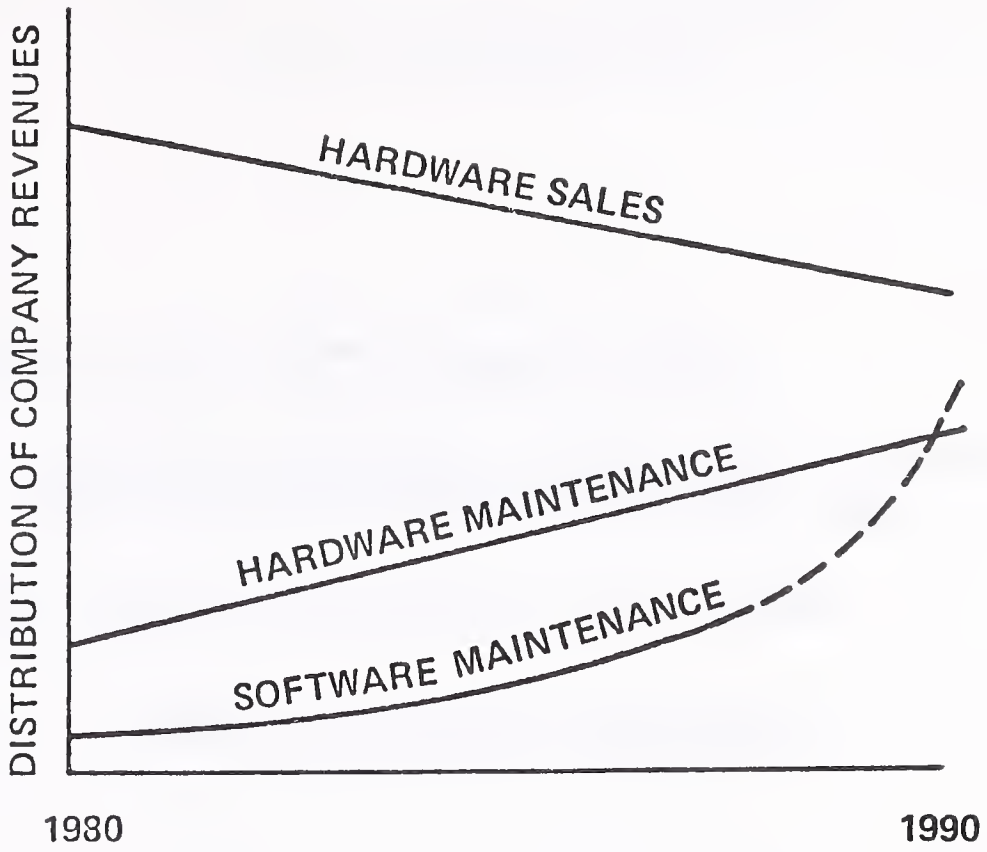
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

TRENDS IN FIELD SERVICES

- MAINTENANCE/SUPPORT IMPORTANT FOR ALL SYSTEMS
- HARDWARE/SOFTWARE MAINTENANCE COMBINATION
- NEW APPROACHES
- MAJOR PROFIT GENERATOR
- ALSO INCLUDES TRAINING, EDUCATION, DOCUMENTATION, AND CONSULTING

TRENDS IN FIELD SERVICES

VENDOR REVENUES



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

TRENDS IN FIELD SERVICES

- HIGH POTENTIAL IN SOFTWARE MAINTENANCE
  - TOTAL SOFTWARE EXPENDITURES BY EDP $25B
  - SOFTWARE MAINTENANCE EXPENDITURES BY EDP $10B
- SOFTWARE MAINTENANCE USER FUNDED

TRENDS IN FIELD SERVICES
NEW APPROACHES

- DEPOT MAINTENANCE
- REMOTE DIAGNOSTICS
- SYSTEM SUPPORT CENTERS
- USER SELF-MAINTENANCE

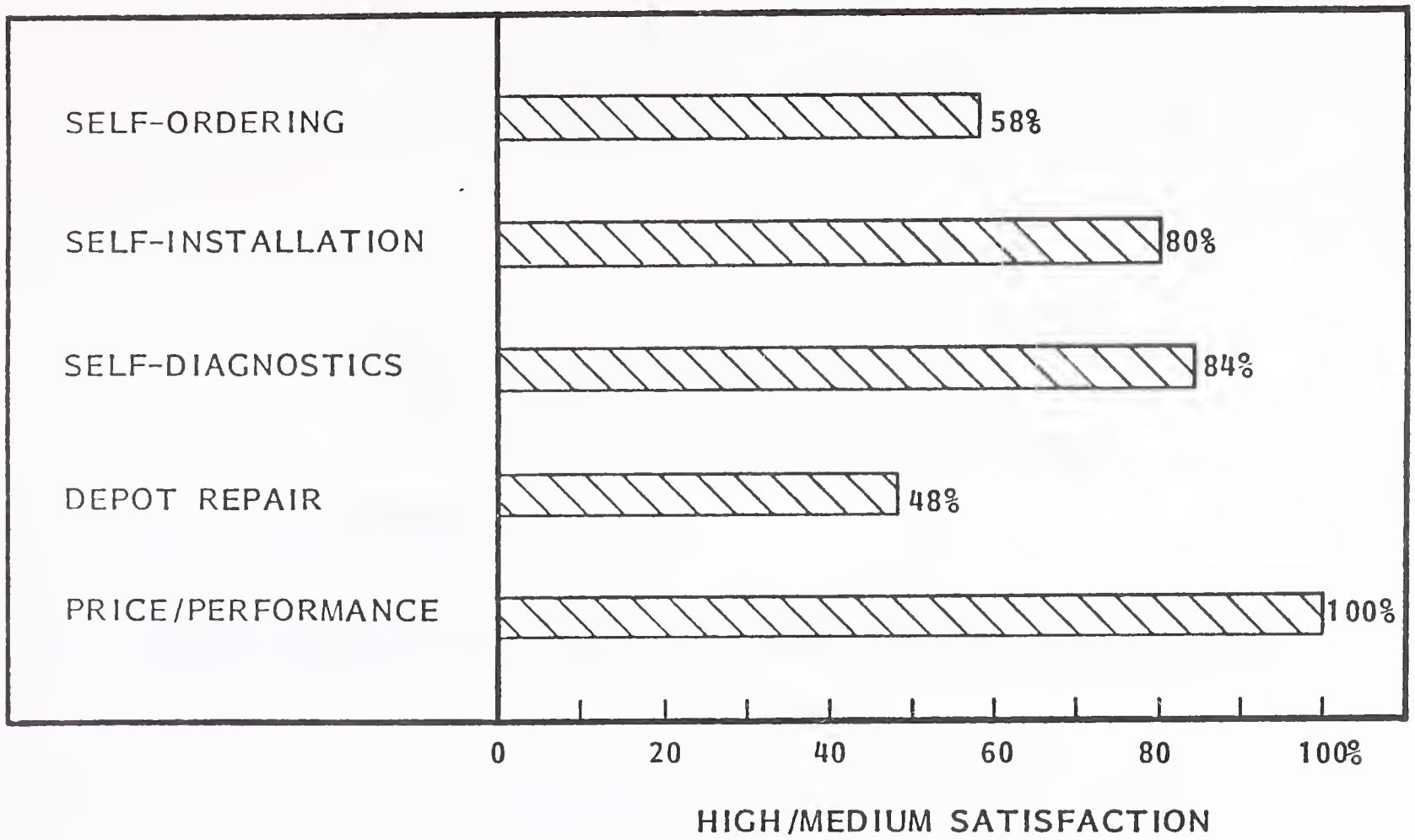
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

TRENDS IN FIELD SERVICES
REMOTE DIAGNOSTICS

- IMPROVED PEOPLE PRODUCTIVITY
  - INCREASED EFFICIENCY AND EFFECTIVENESS OF CALLS
  - REDUCED MEAN TIME TO REPAIR
  - IMPROVED UP-TIME
- CHANGES STAFF REQUIREMENTS

USER REACTION TO DEPOT MAINTENANCE



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

FIELD SERVICE & COMPUTER SERVICES COMPARISONS

SIMILARITIES

DERIVED FROM HARDWARE MANUFACTURERS
PEOPLE INTENSIVE AND PEOPLE SHORT
PRICE COMPARISONS DIFFICULT

TRENDS IN FIELD SERVICES
FIELD SERVICE & COMPUTER SERVICES COMPARISONS

DIFFERENCES

COMPUTER SERVICES PRICED HIGH, SOLD HARD,
COMPETE WITH IN-HOUSE

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

IV COMPUTER SERVICES MARKETS

IMPACTS OF ECONOMY

- RECESSION IN 1980
- SLOW RECOVERY IN 1981
- CONSUMER PRICE INDEX UP 13% IN 1980
- PRODUCTION PRICE INDEX UP 6% IN 1980

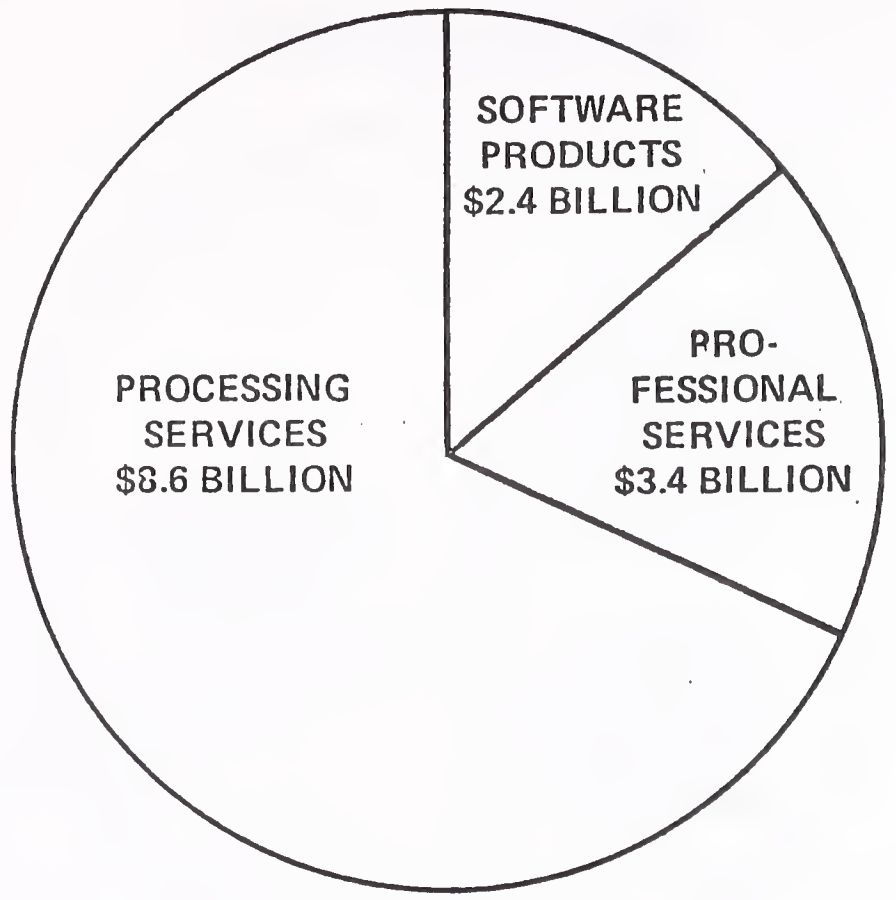
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

IMPACTS OF ECONOMY

- PRICE INCREASES THROUGH 1985
  - PROCESSING SERVICES 6/7%
  - SOFTWARE PRODUCTS 8/9%
  - PROFESSIONAI SERVICES 9/10%
- RECESSION SLOWS GROWTH
- HIGH COST OF MONEY IMPACTS TURNKEY VENDORS

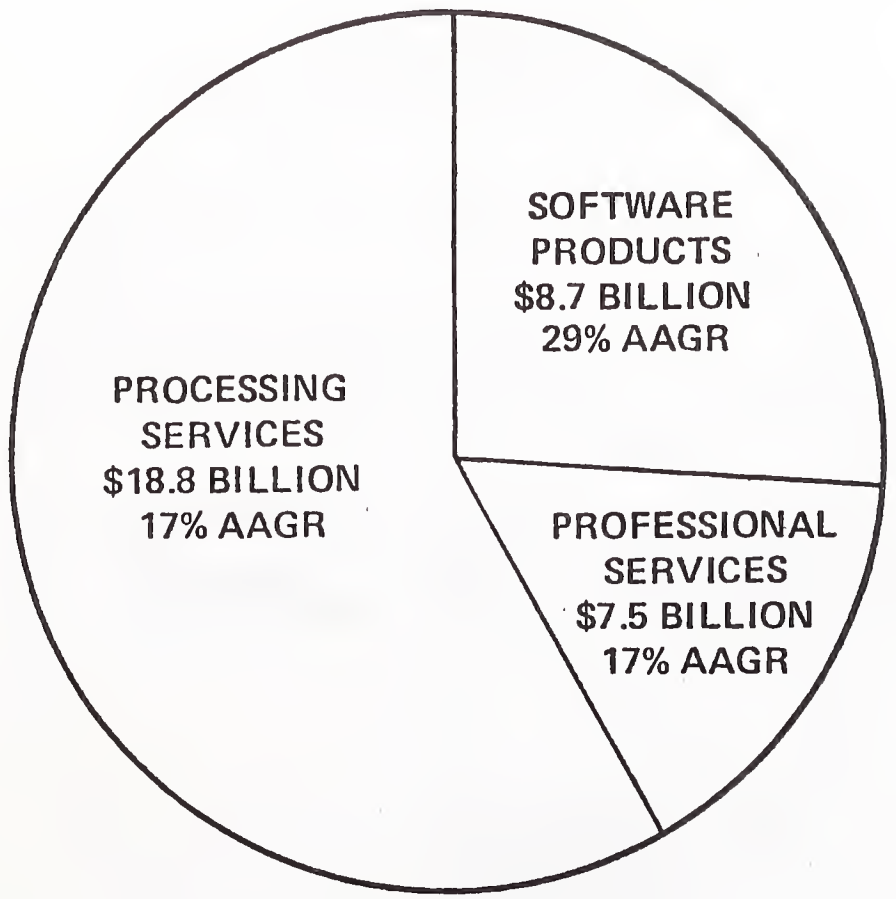
U.S. COMPUTER SERVICES MARKET-1980
(CURRENT DOLLARS)



$14.4 BILLION

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

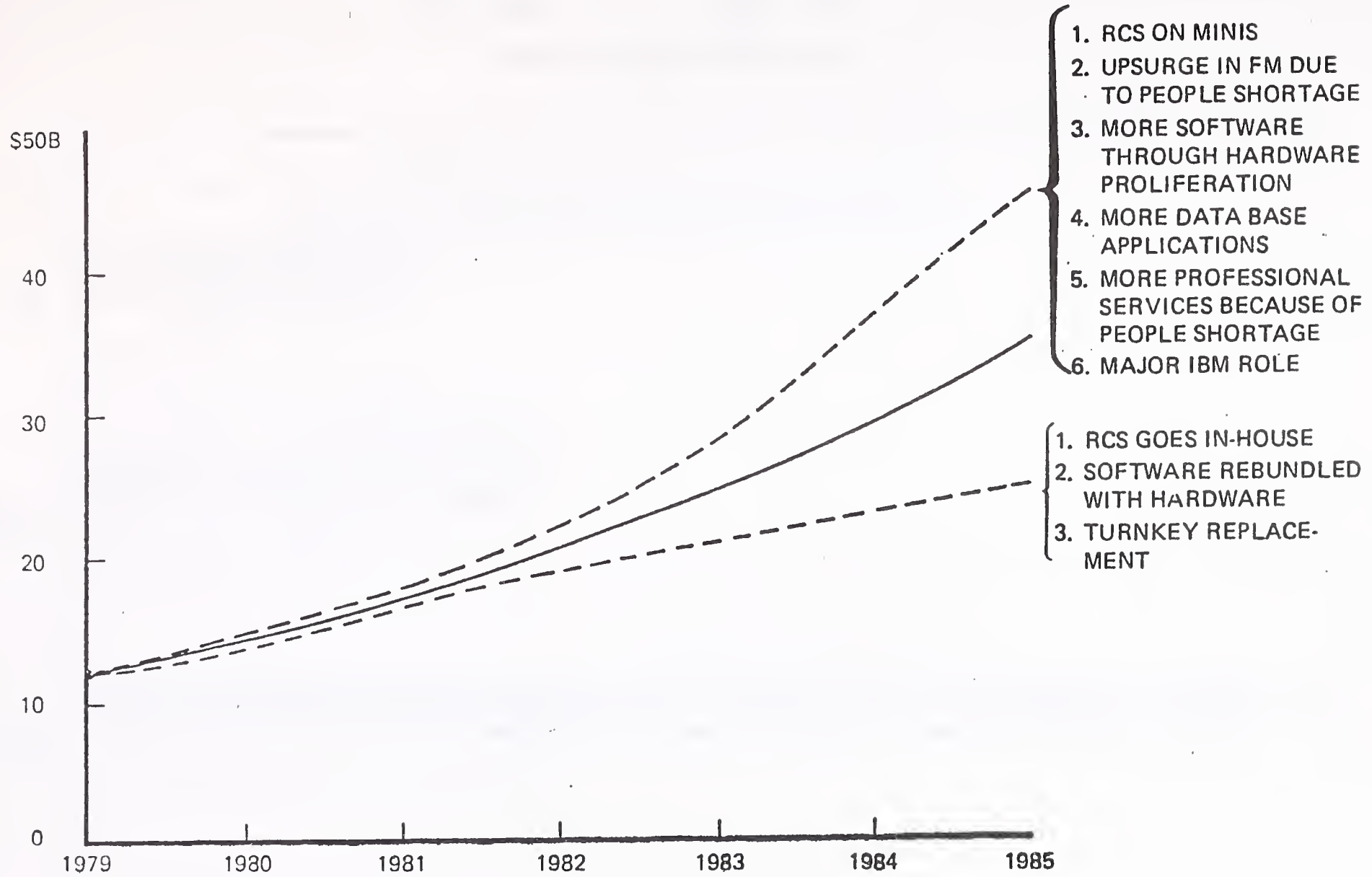
U.S. COMPUTER SERVICES MARKET–1985
(CURRENT DOLLARS)



$35 BILLION, 20% AAGR

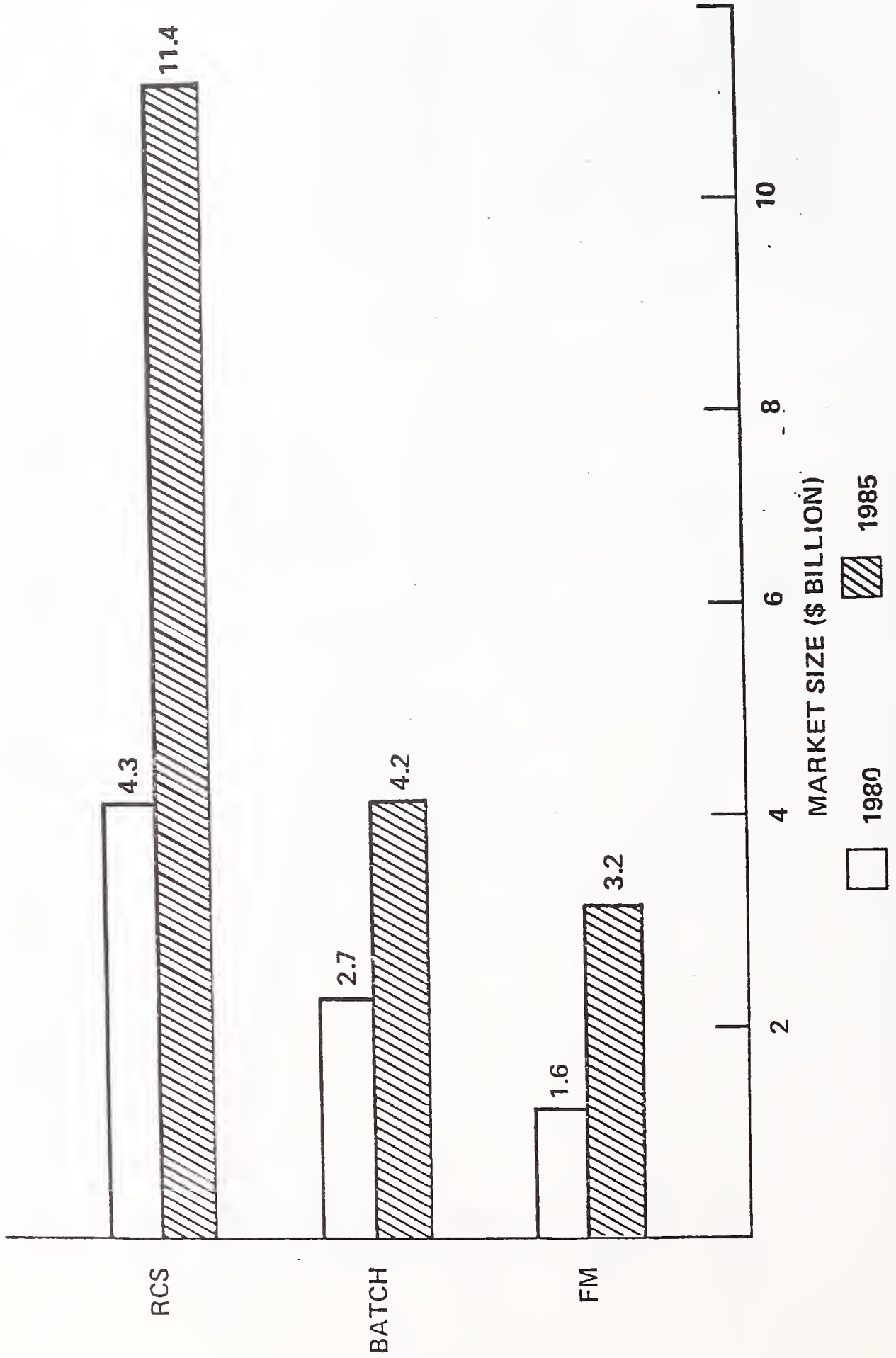
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

POTENTIAL COMPUTER SERVICES MARKET GROWTH, 1979-1985



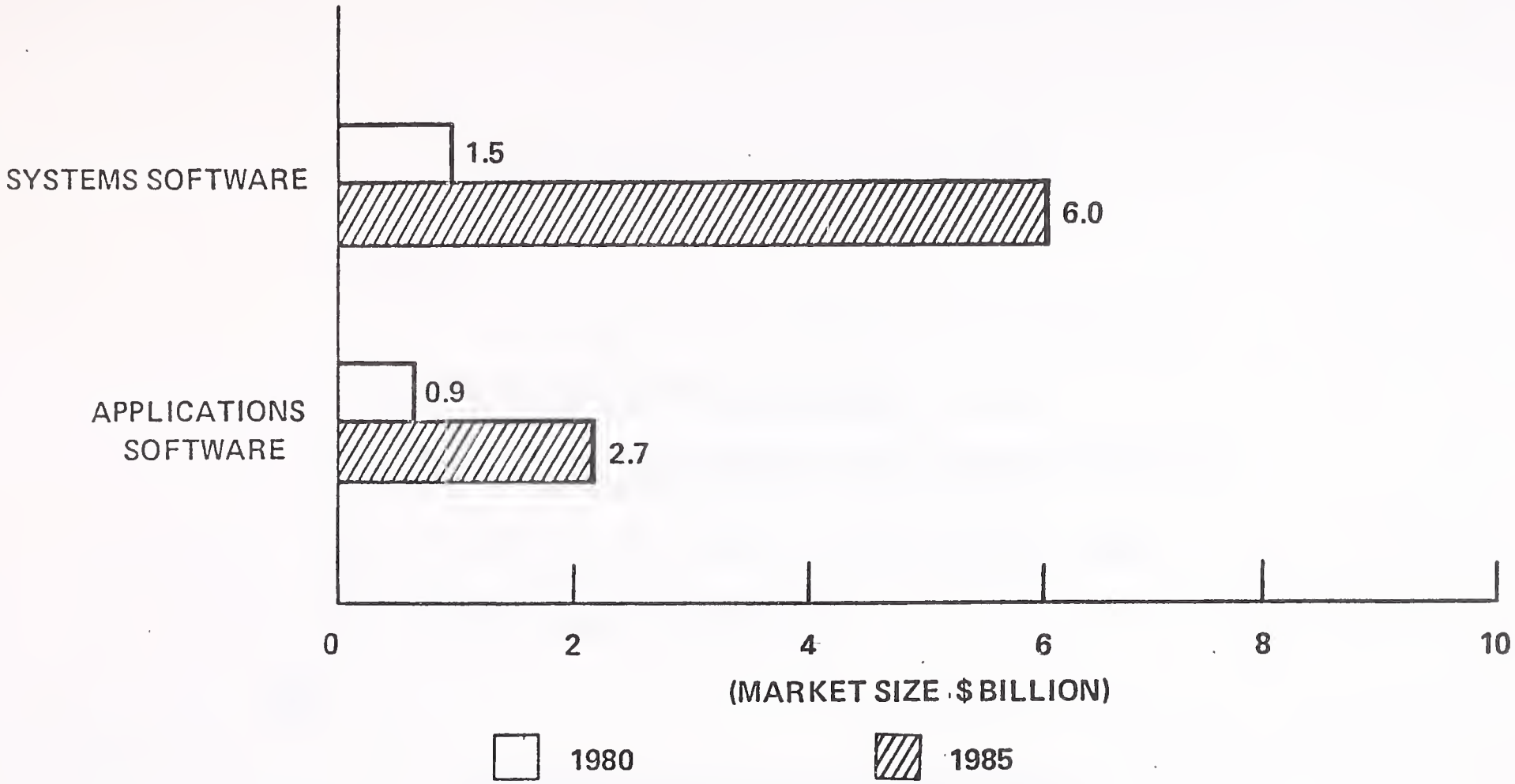
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

PROCESSING SERVICES MARKETS



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

SOFTWARE PRODUCTS MARKETS



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

MILESTONES OF THE EIGHTIES

U.S.

1985 SCS SATURATION REACHED

1986 SERVICES COS. NATURAL OUTLET FOR SCS, VSCS

1987 INTEGRATED NETWORKS START TO BE IMPLEMENTED

1989 HOME COMPUTING FLOURISHING

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

MILESTONES OF THE EIGHTIES

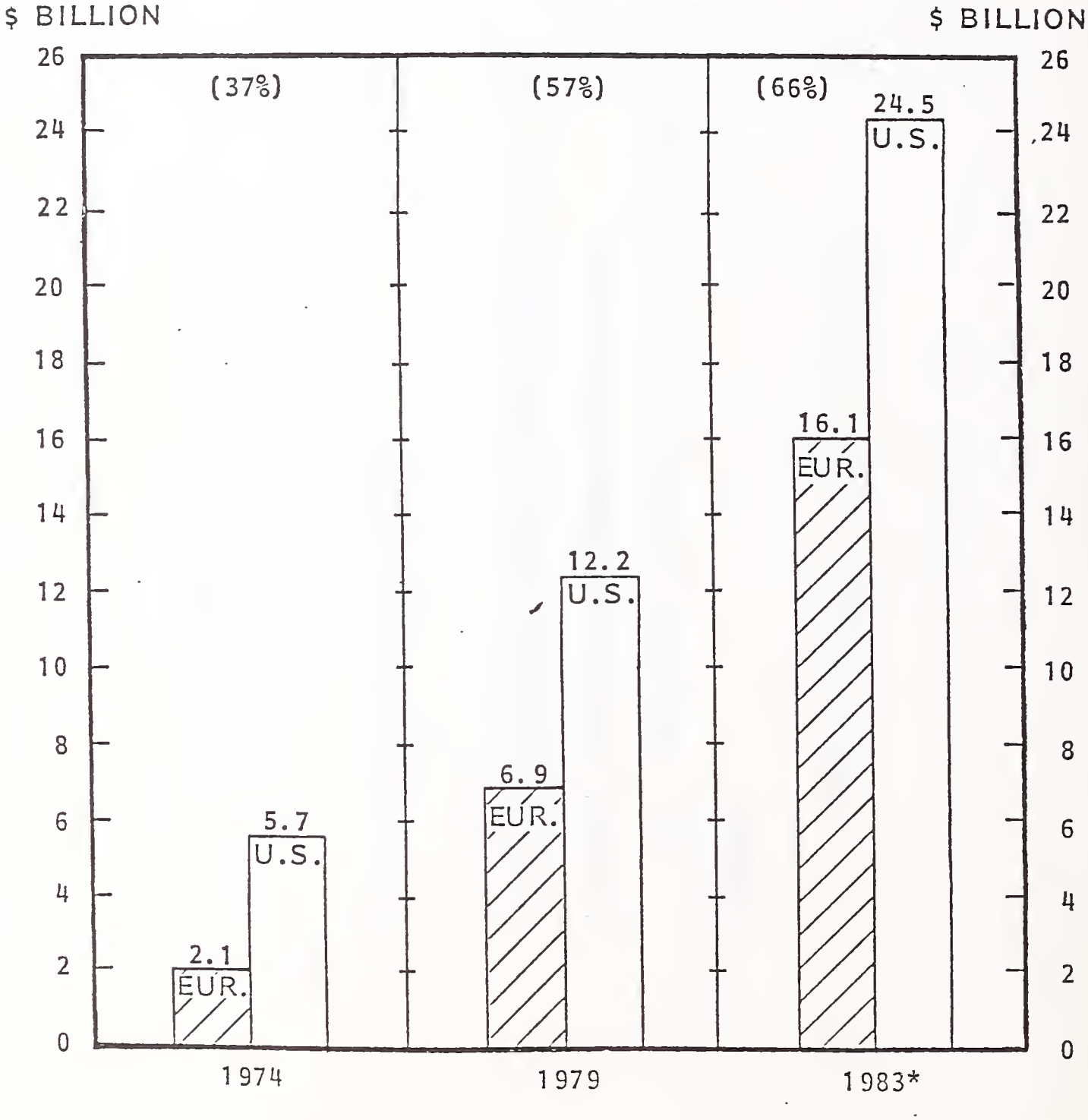
EUROPE

1984 SCS/TURNKEY SYSTEMS' MOST ACTIVE SECTOR

1986 VIDEOTEXT IN 50% OF FRENCH HOMES

1989 SCS MARKET SECTOR 67% SATURATED

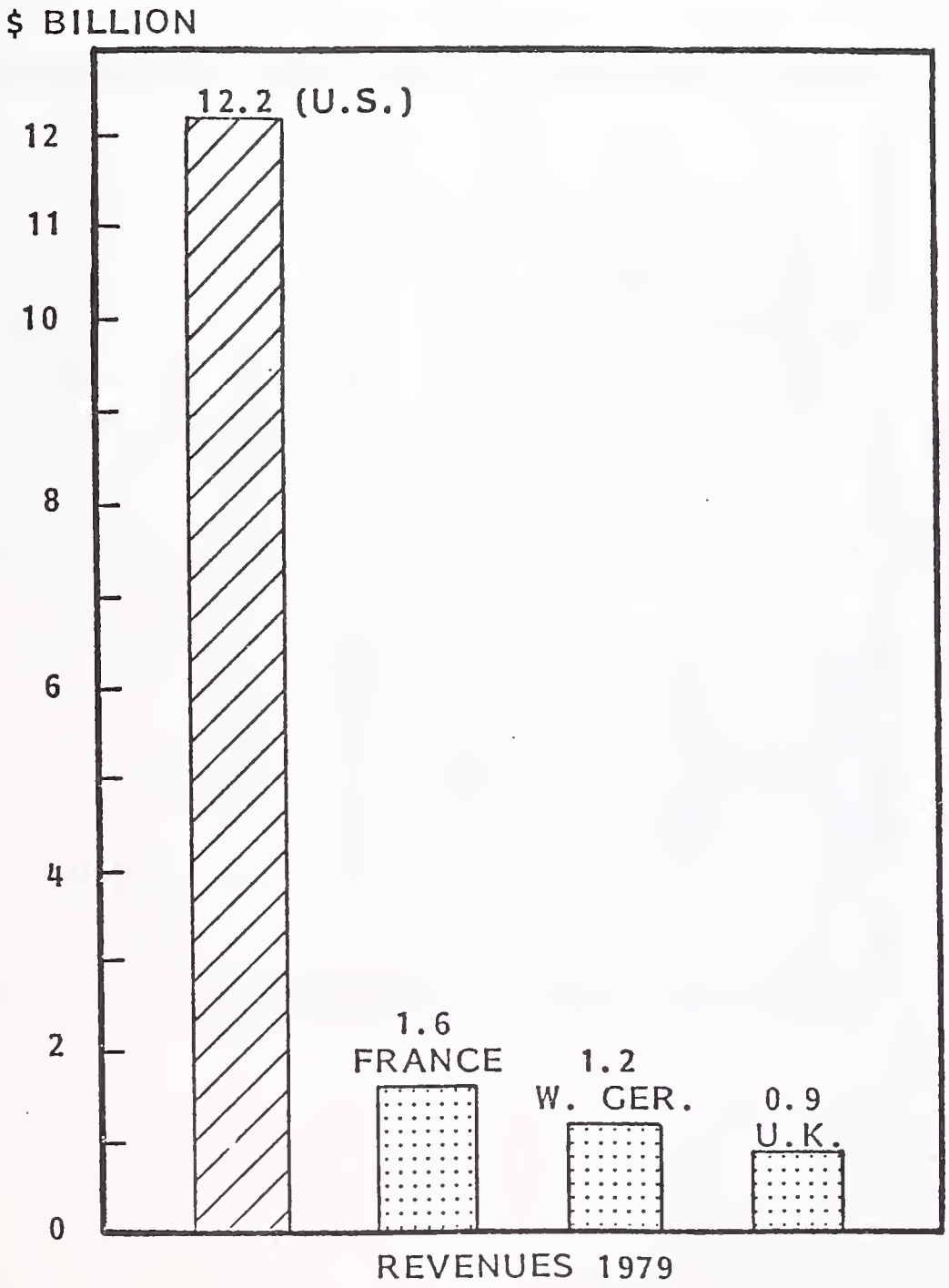
COMPUTER SERVICES MARKETS EUROPE - U.S. COMPARISON



*FORECASTING COMPLICATIONS — PRICES
— SOFTWARE PRODUCTS (MANUFACTURERS)

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

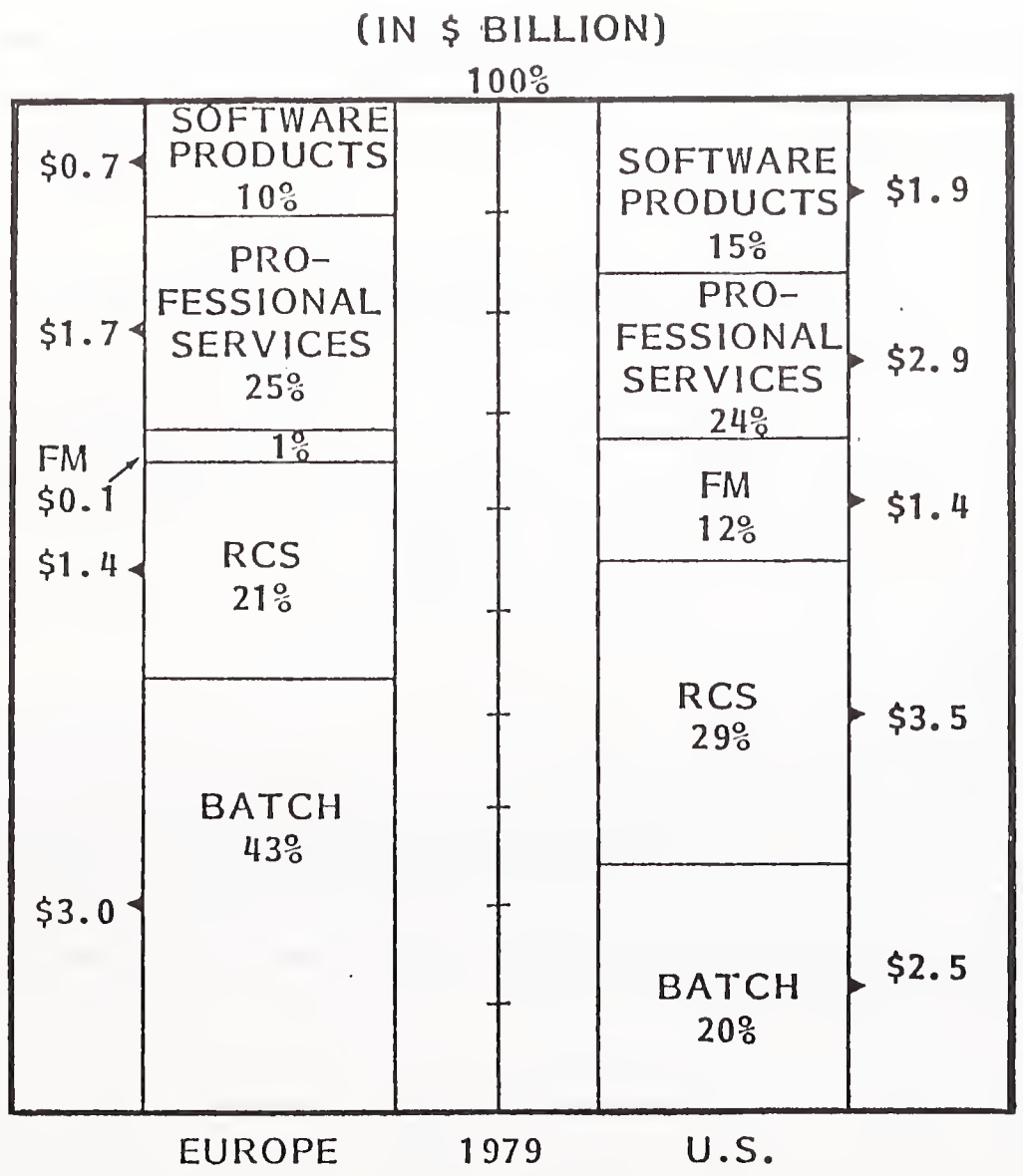
HOME MARKET BASE



© 1980 by INPUT., Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

PRODUCT SECTORS



DATA BASE SERVICES

- VORACIOUS DEMAND FOR INFORMATION
- DATA + TOOLS = INFORMATION
- DATA BASES ARE KEYS TO MARKETS

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

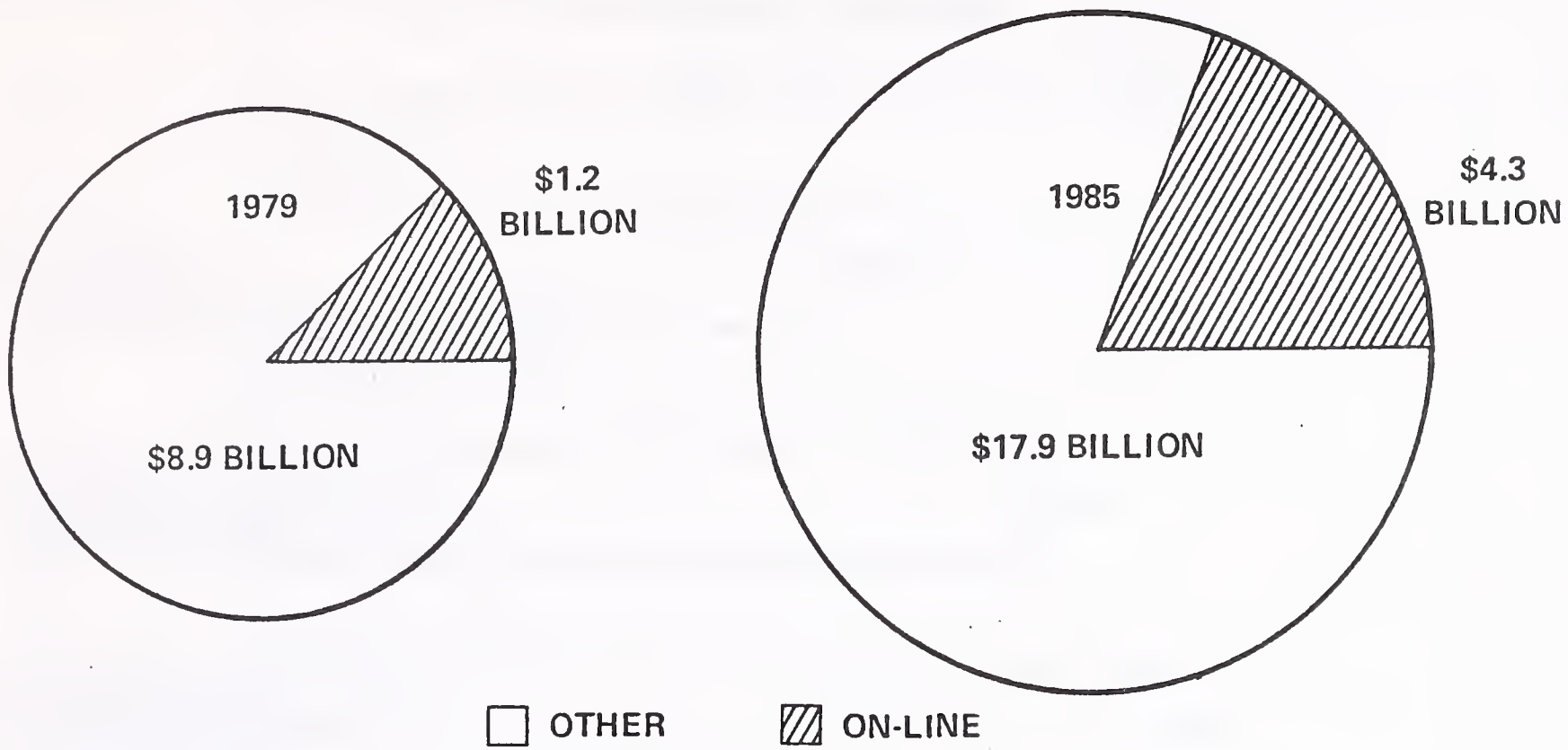
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

DATA BASE SERVICES

- OVER 400 DATA BASES AVAILABLE ON-LINE
- OVER 140 VENDORS CREATE & MAINTAIN ON-LINE DATA BASES
- OVER 60 RCS VENDORS OFFER ON-LINE DATA BASE SERVICES

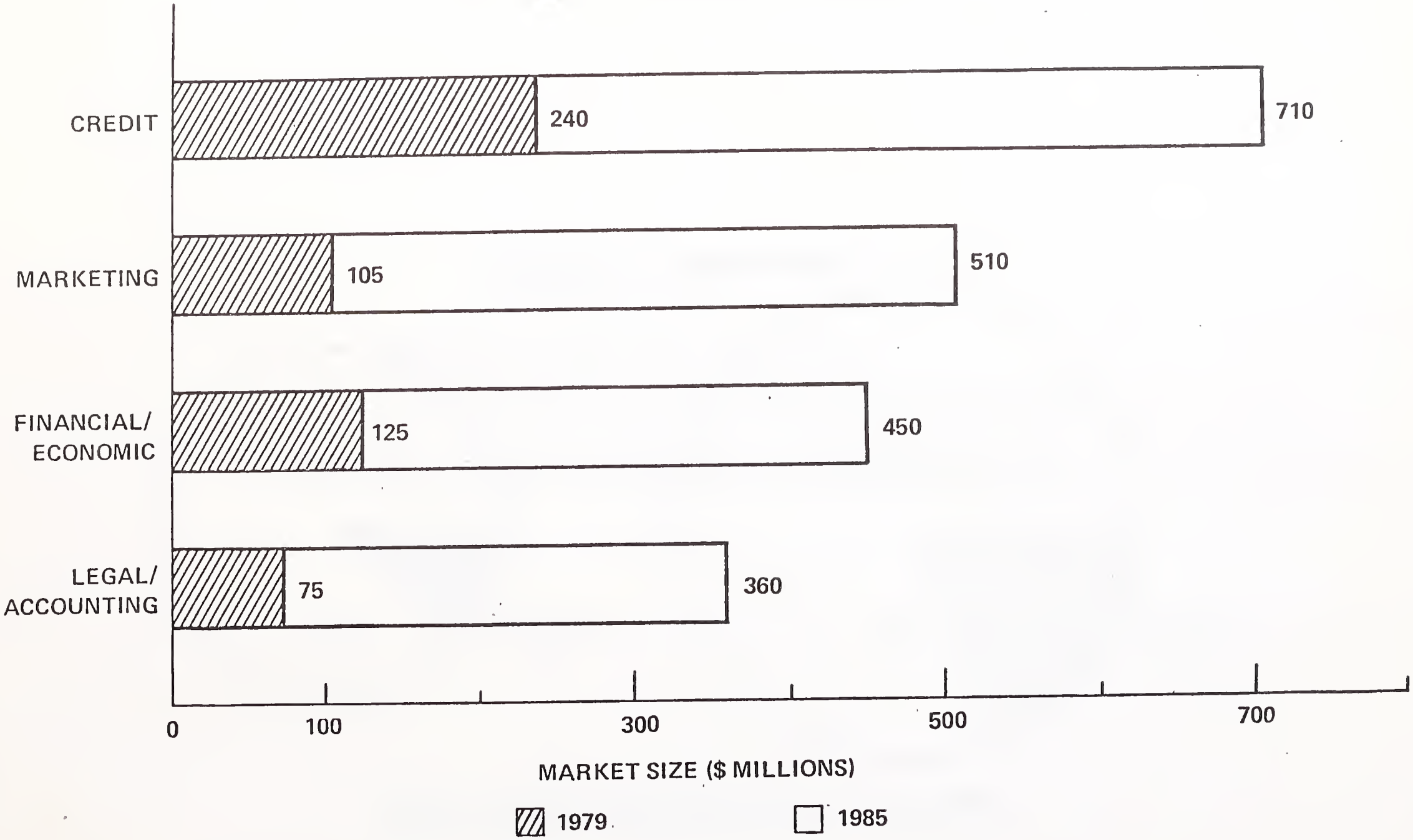
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

DATA BASE SERVICES MARKET, 1979-1985



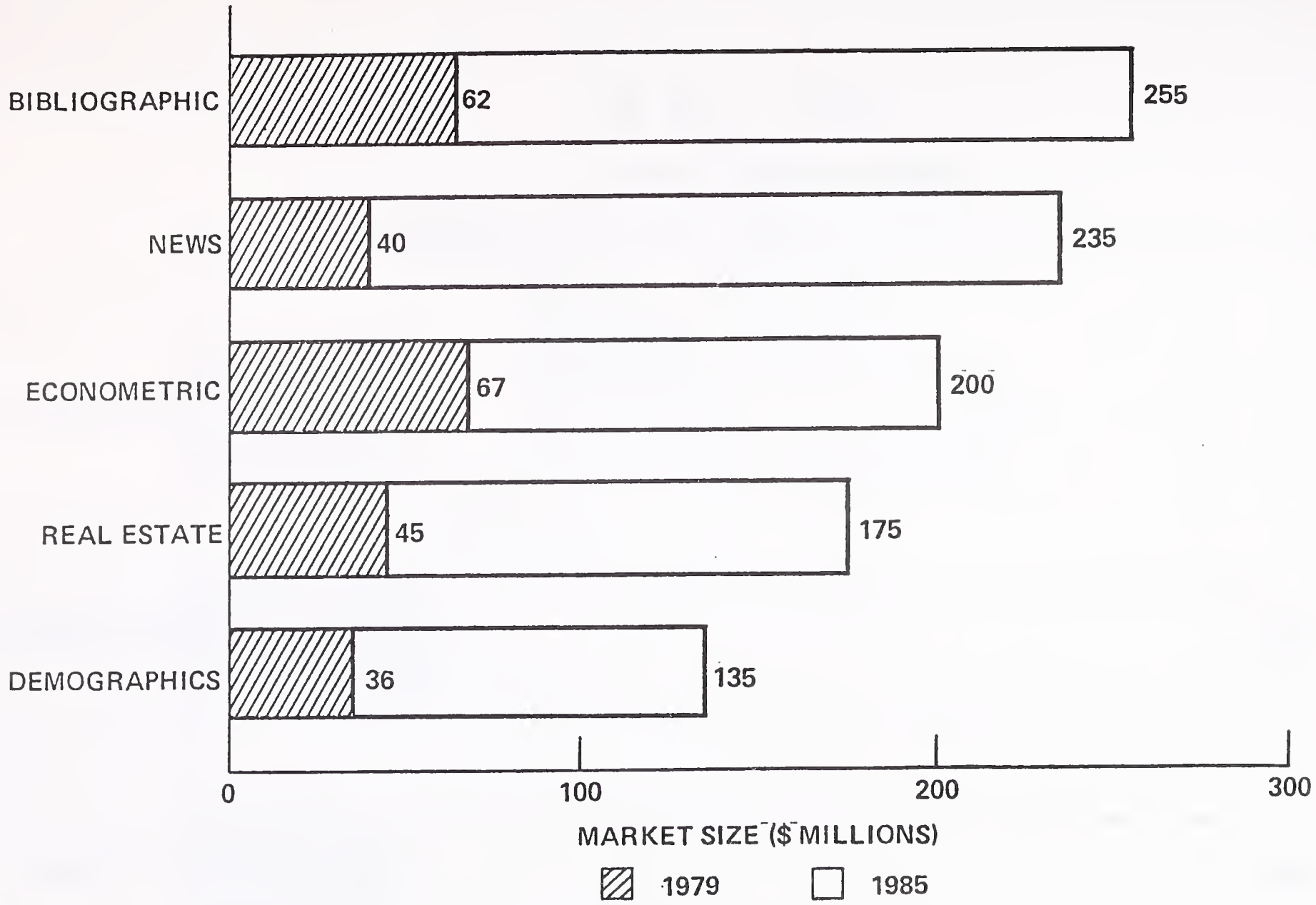
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

DATA BASE SERVICES MARKET



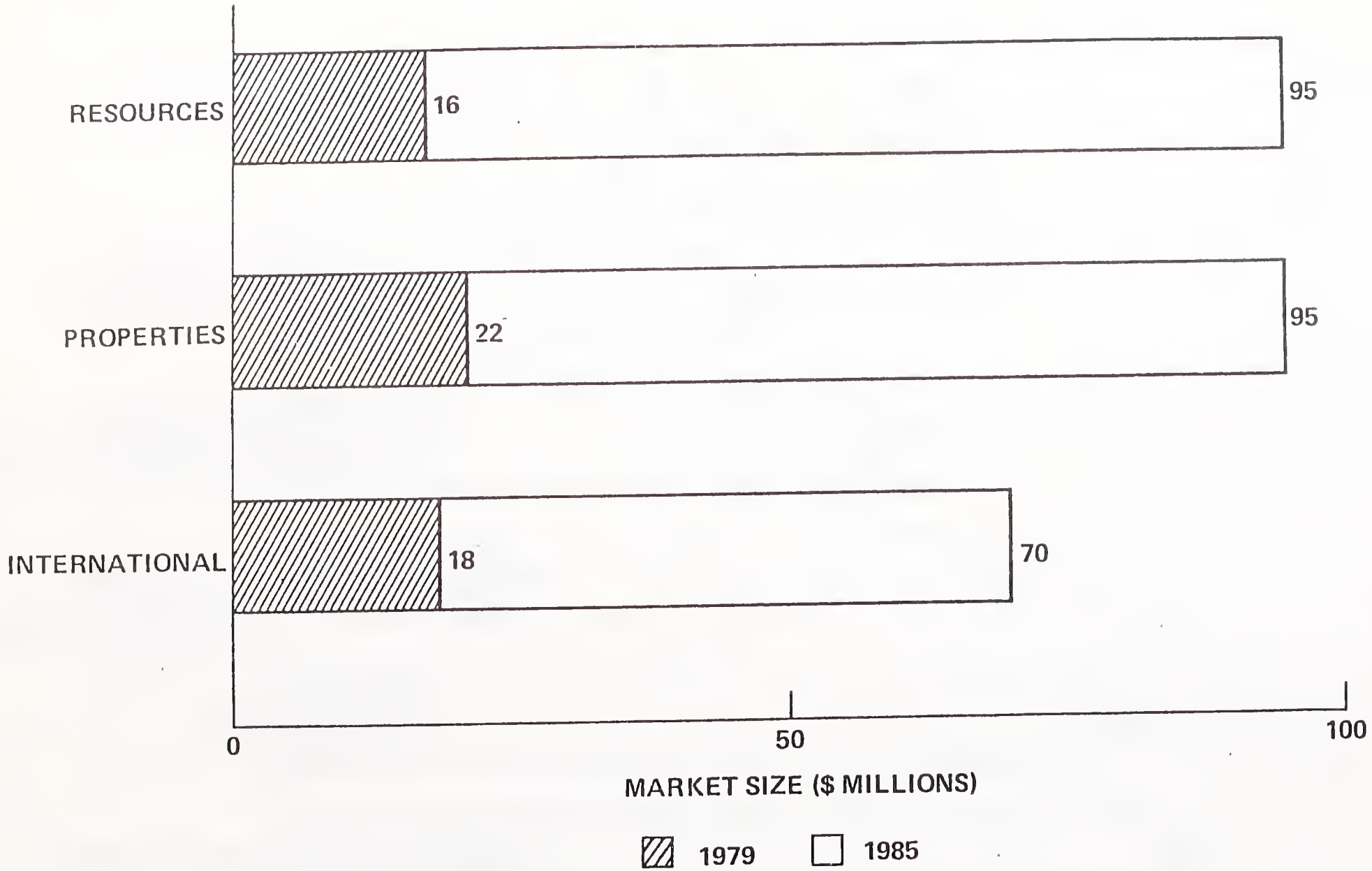
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

DATA BASE SERVICES MARKET



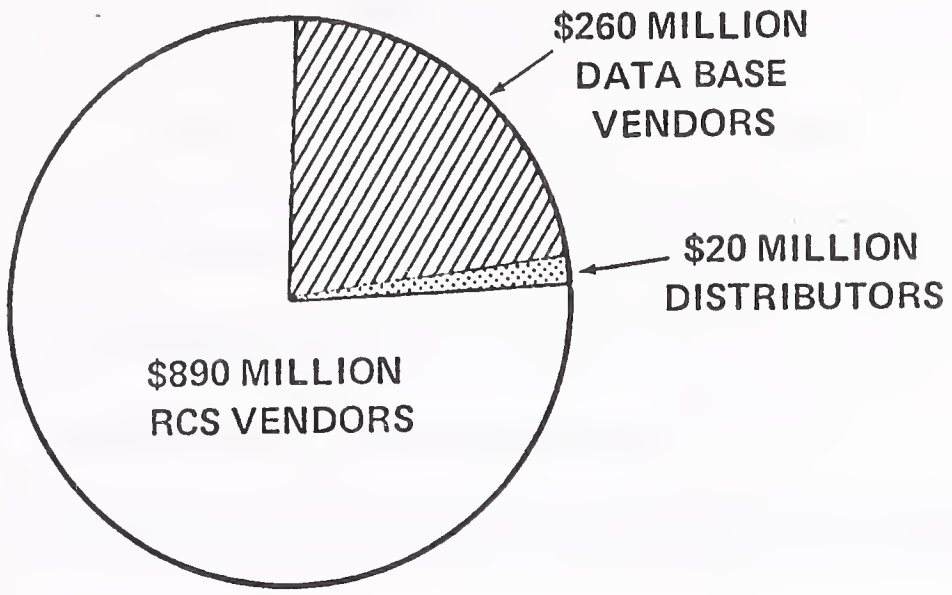
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

DATA BASE SERVICES MARKET



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

MARKET SHARE BY VENDOR TYPE



1979

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

DATA BASE SERVICES
IMPACT OF ADVANCED TECHNOLOGIES

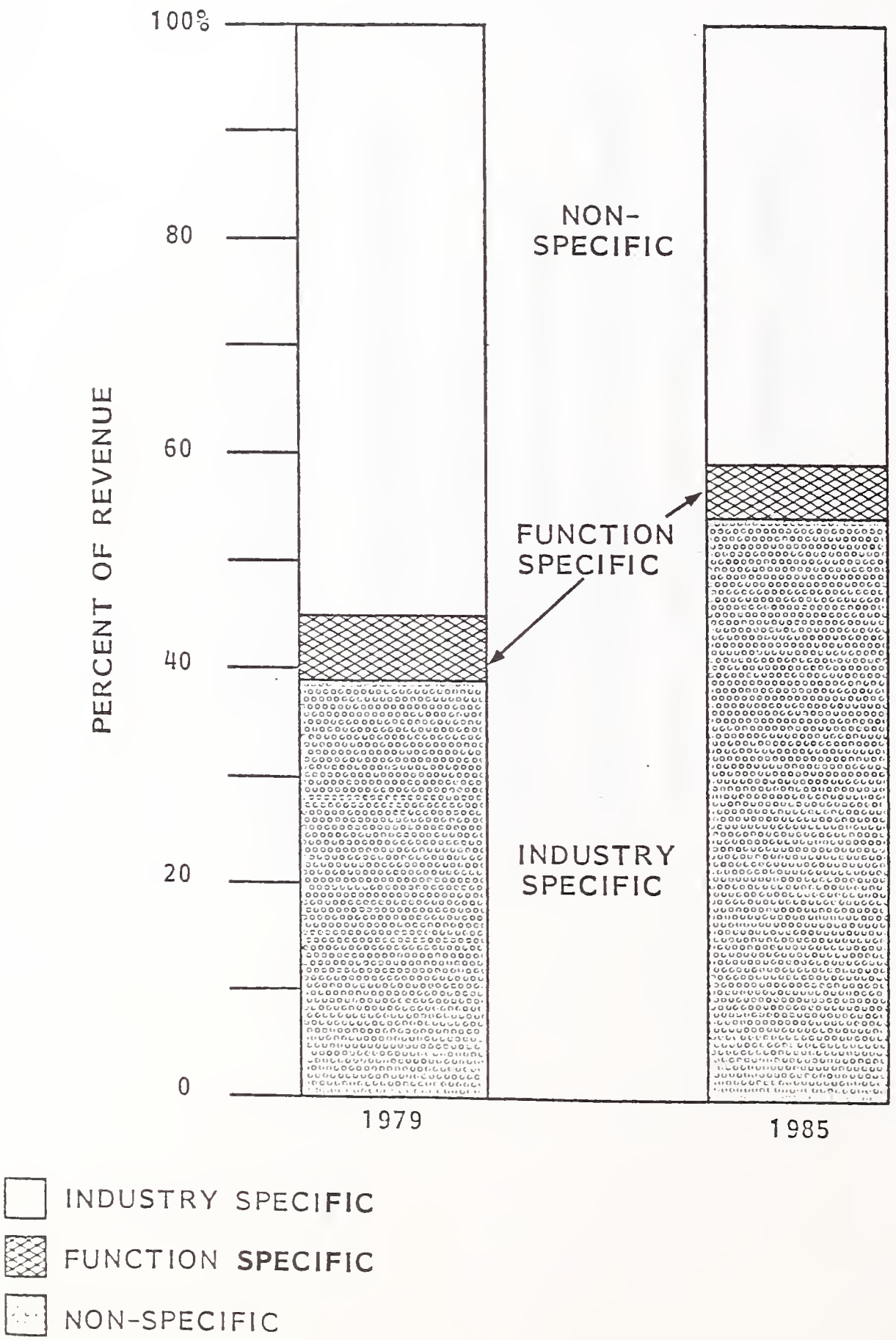
- WIDEBAND INFORMATION DISTRIBUTION CHANNELS
- IMAGING DATA ENTRY SYSTEMS
- CHEAP TERMINALS
- MASS STORAGE DEVICES

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

DATA BASE SERVICES MARKET FORCES

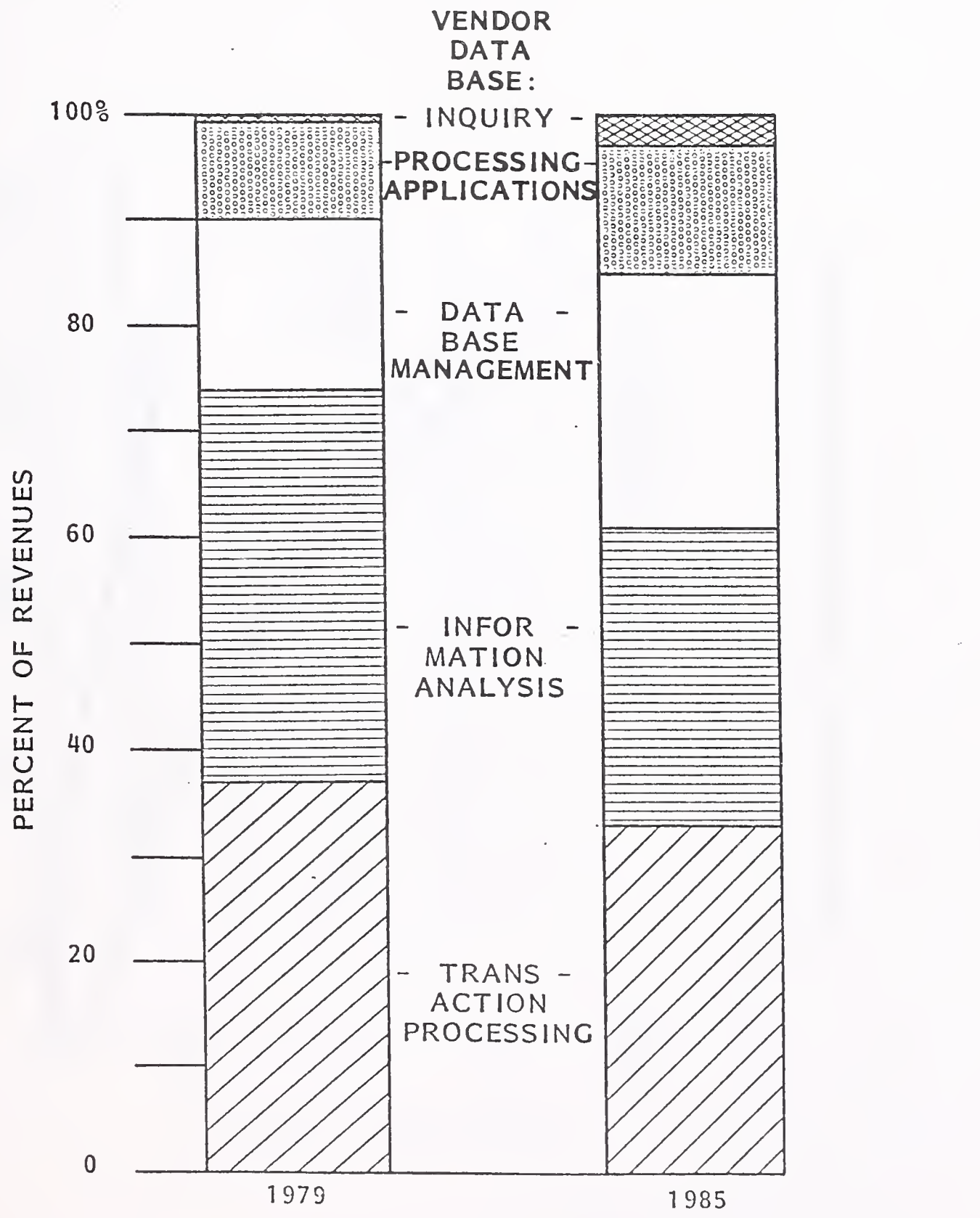
- VERTICAL INTEGRATION BY PUBLISHERS
- VERTICAL INTEGRATION BY DISTRIBUTION VENDORS
- MARKET ENTRY BY COMMUNICATIONS FIRMS
- MARKET ENTRY BY FOREIGN VENDORS
- EMERGENCE OF CONSUMER-ORIENTED NETWORKS

PROCESSING TRENDS: RCS VENDOR REVENUE DISTRIBUTION



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

PROCESSING TRENDS: RCS VENDOR REVENUE DISTRIBUTION



TRANSACTION PROCESSING

INFORMATION ANALYSIS

DATA BASE MANAGEMENT

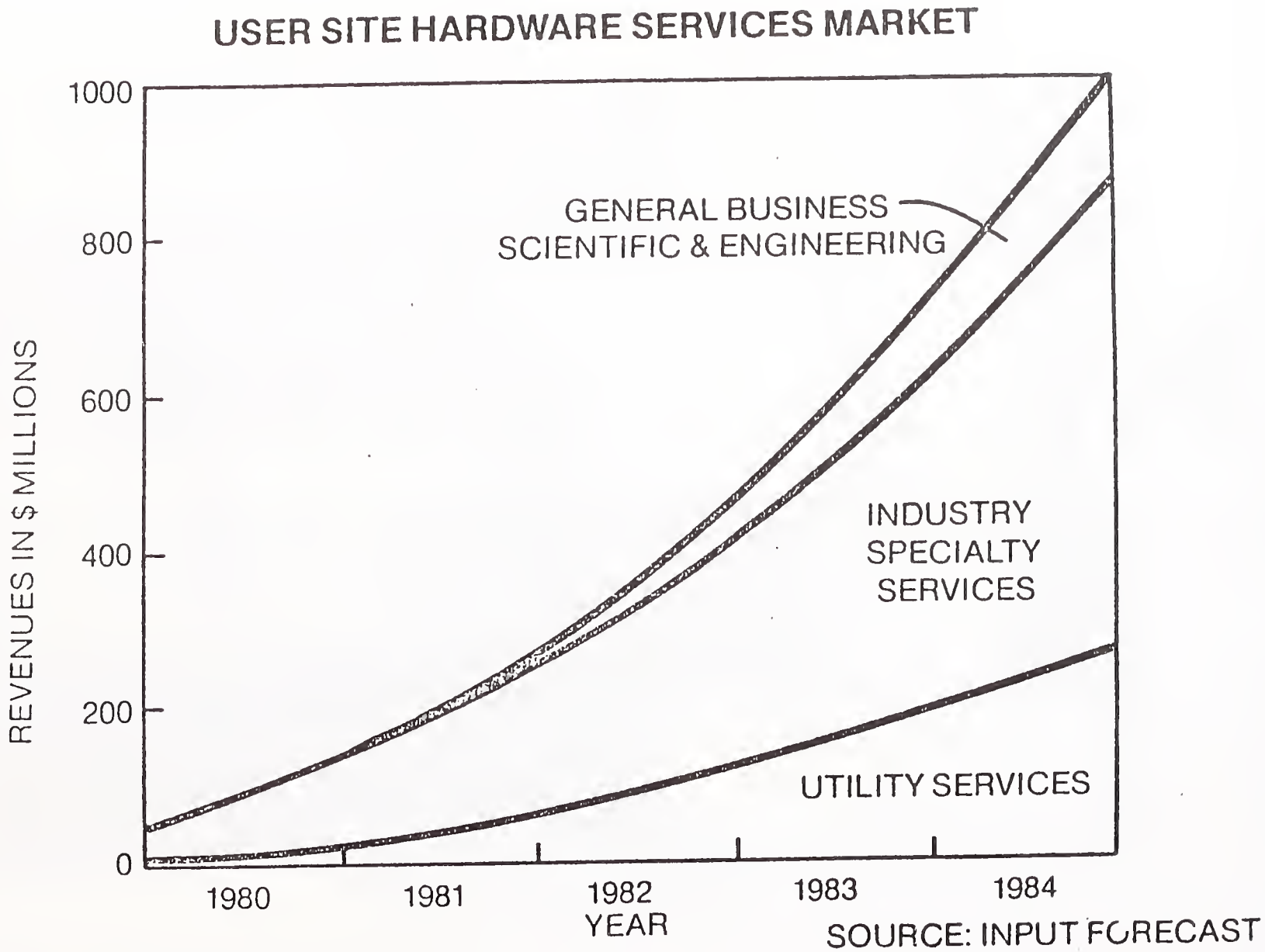
VENDOR DATA BASE:

INQUIRY ONLY

PROCESSING APPLICATIONS

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

ADVANTAGES OF USHS STRATEGY

- PARTICIPATE IN THE DDP MARKET
- PARTICIPATE IN DECENTRALIZATION
- CAPTURE A PORTION OF IN-HOUSE TIMESHARING
- INTEGRATED NETWORK AND SOFTWARE PRODUCT
- PROVIDE ENTRY TO THE SMALL USER AREA

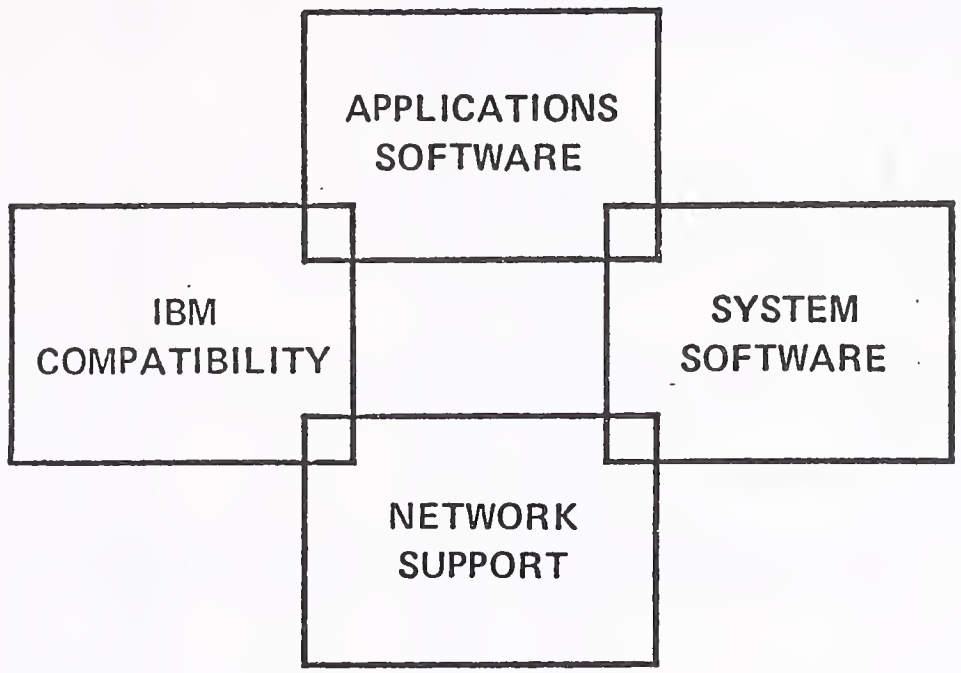
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

USHS

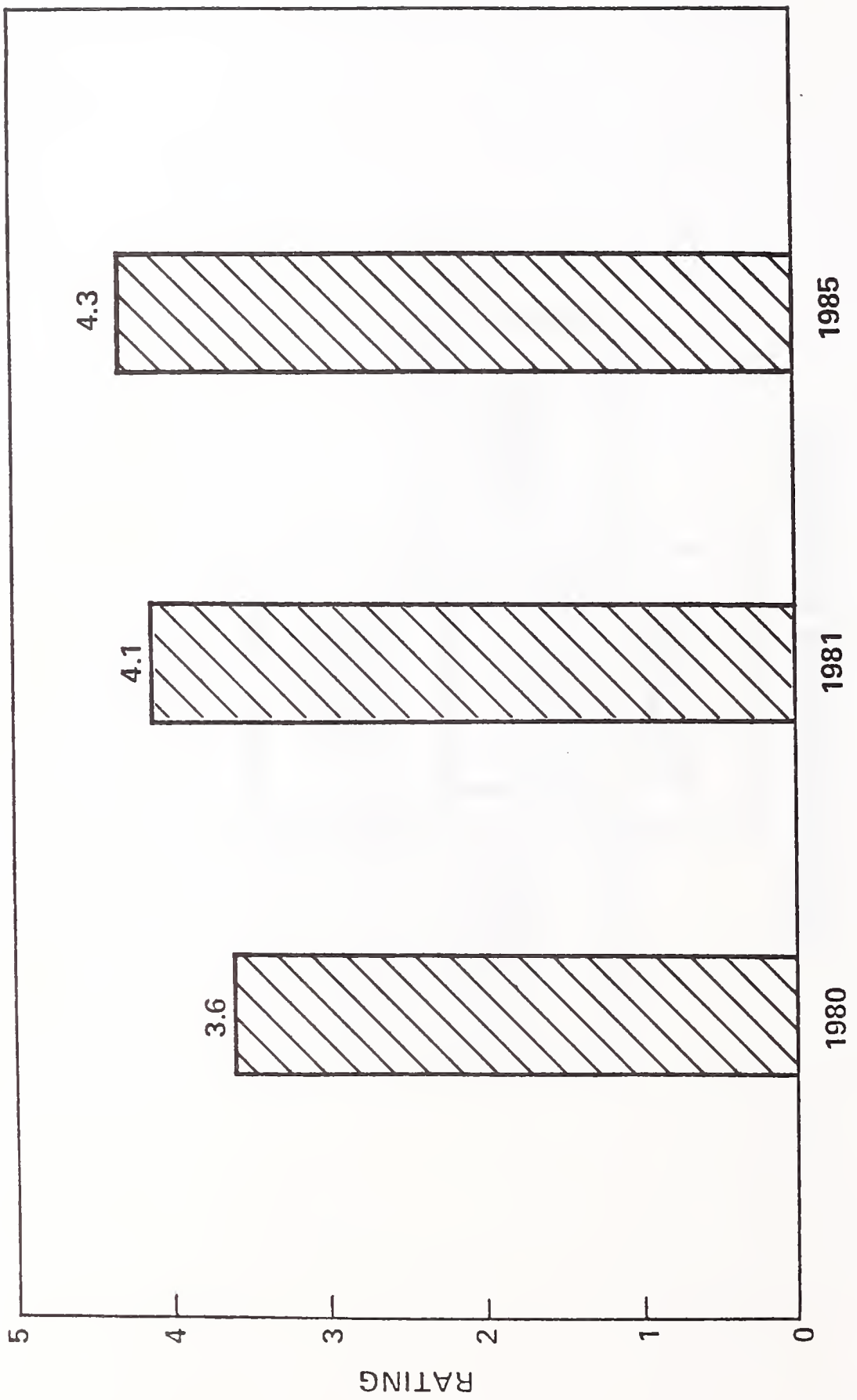
- RCS CONVERSION TAKING PLACE
  - COST SAVINGS TO USER 40%
  - USUALLY FROM USHS VENDOR
- SALES CYCLE: 6 MONTHS AFTER EDP MANAGER INVOLVED
- EDP MANAGERS/END USERS WORKING TOGETHER
- MAJORITY OF MAJOR VENDORS NOW HAVE USHS

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

USHS ELEMENTS REQUIRED



IMPORTANCE OF A NETWORK IN USHS



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

APPLICATIONS SOFTWARE PACKAGES DEMAND

- DEVELOPMENT COSTS BEYOND BUDGETS
- NEW COMPANIES BUYING NEW FEATURES
- EXISTING USERS BUY NEW FEATURES
- BUYING MULTIPLE SYSTEMS FROM SINGLE VENDOR
- BECOMING MORE SOPHISTICATED SHOPPERS

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

APPLICATIONS SOFTWARE PACKAGES
END USERS

- LOOK TO EDP DEPARTMENT FOR CENTRAL SYSTEMS
- THIRD PARTIES OR THEMSELVES FOR SMALL SYSTEMS

© 1980 by INPUT, Palo Alto, CA 94303 - Reproduction Prohibited.

APPLICATIONS SOFTWARE PACKAGES VENDORS

- VENDORS FORCED TO INTEGRATE APPLICATIONS
- CONSOLIDATION OF VENDORS EXPECTED
  - DEVELOPMENT COSTS
  - MARKETING LEVERAGE
- NO NEW DEVELOPMENT TECHNIQUES EXPECTED IN NEXT 3 YEARS

APPLICATIONS SOFTWARE PACKAGES ISSUES

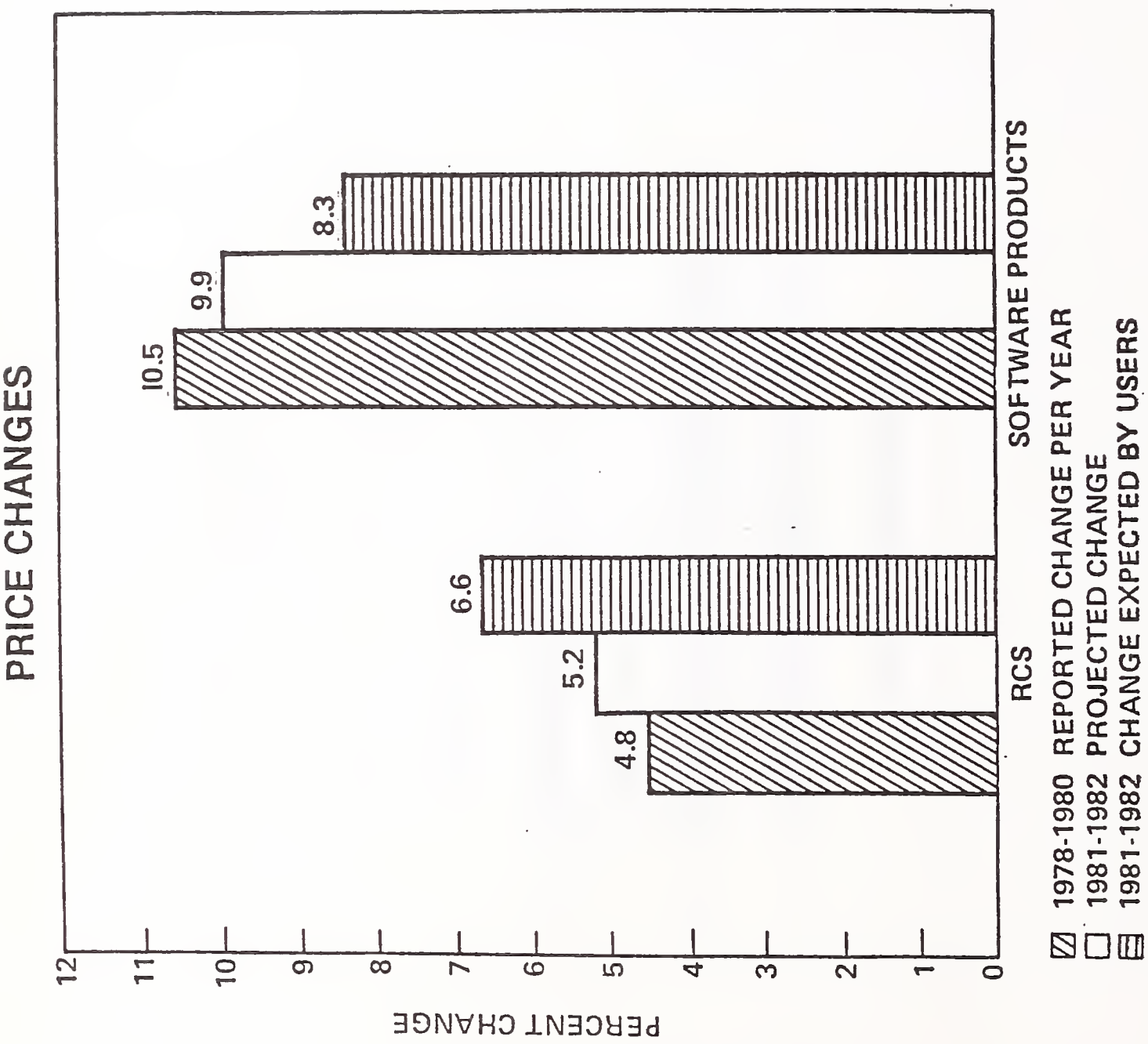
- PRODUCTS WELL SUITED TO NEARLY ALL USERS
  - — VENDORS
- WANT AND EXPECT MORE CUSTOMIZING
  - — USERS
- INSTALLATION CYCLE UNSATISFACTORY
  - — USERS AREN'T PREPARED — VENDORS
  - — EXPECTATIONS AREN'T MET — USERS

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

PRICING METHODS

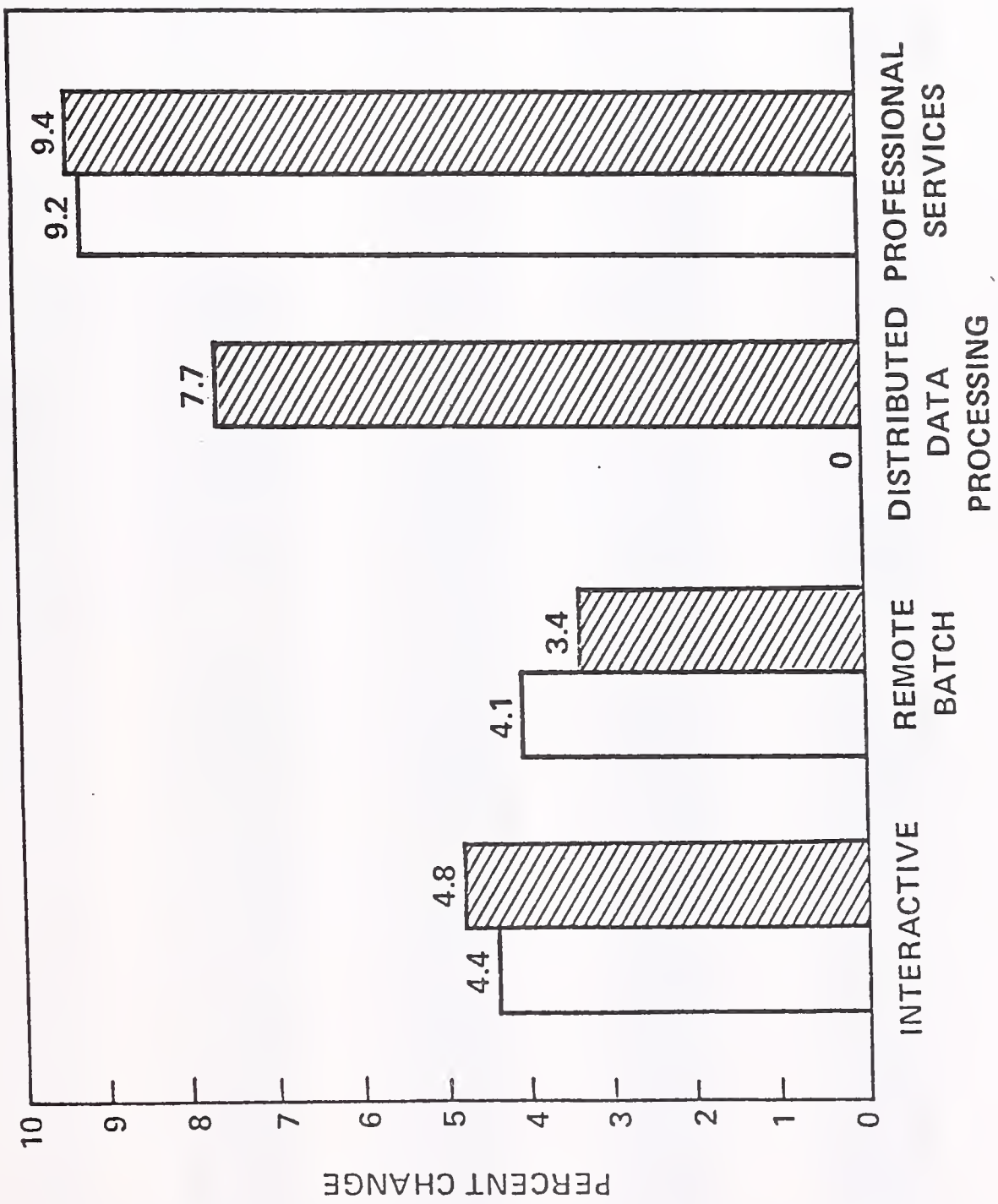
- RCS PRIMARILY RESOURCE (88%)
- SOFTWARE PRODUCTS PRIMARILY LUMP SUM
- TREND TO SIMPLICITY
- LESS DISCOUNTING

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

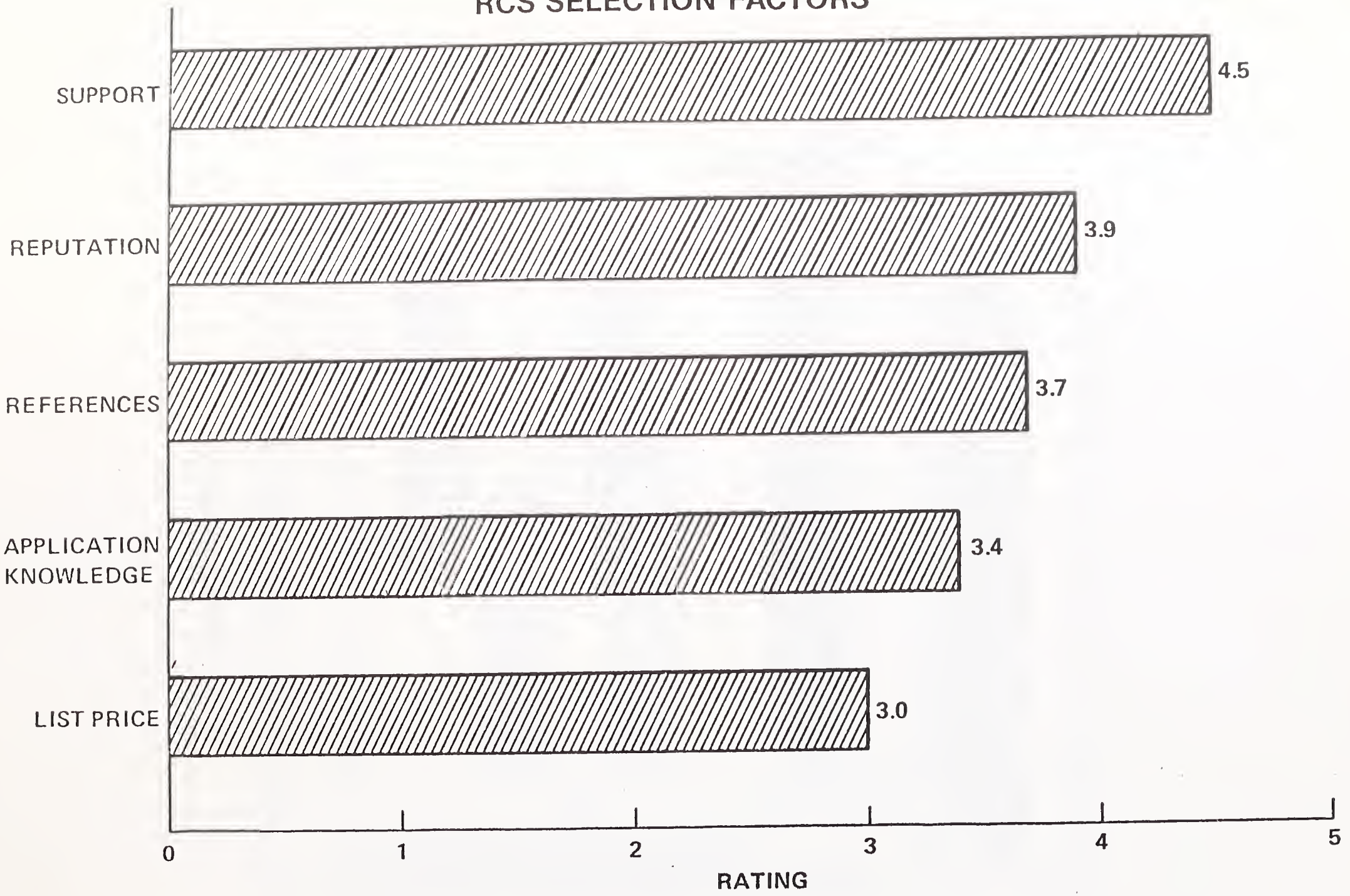
RCS PRICING CHANGES



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

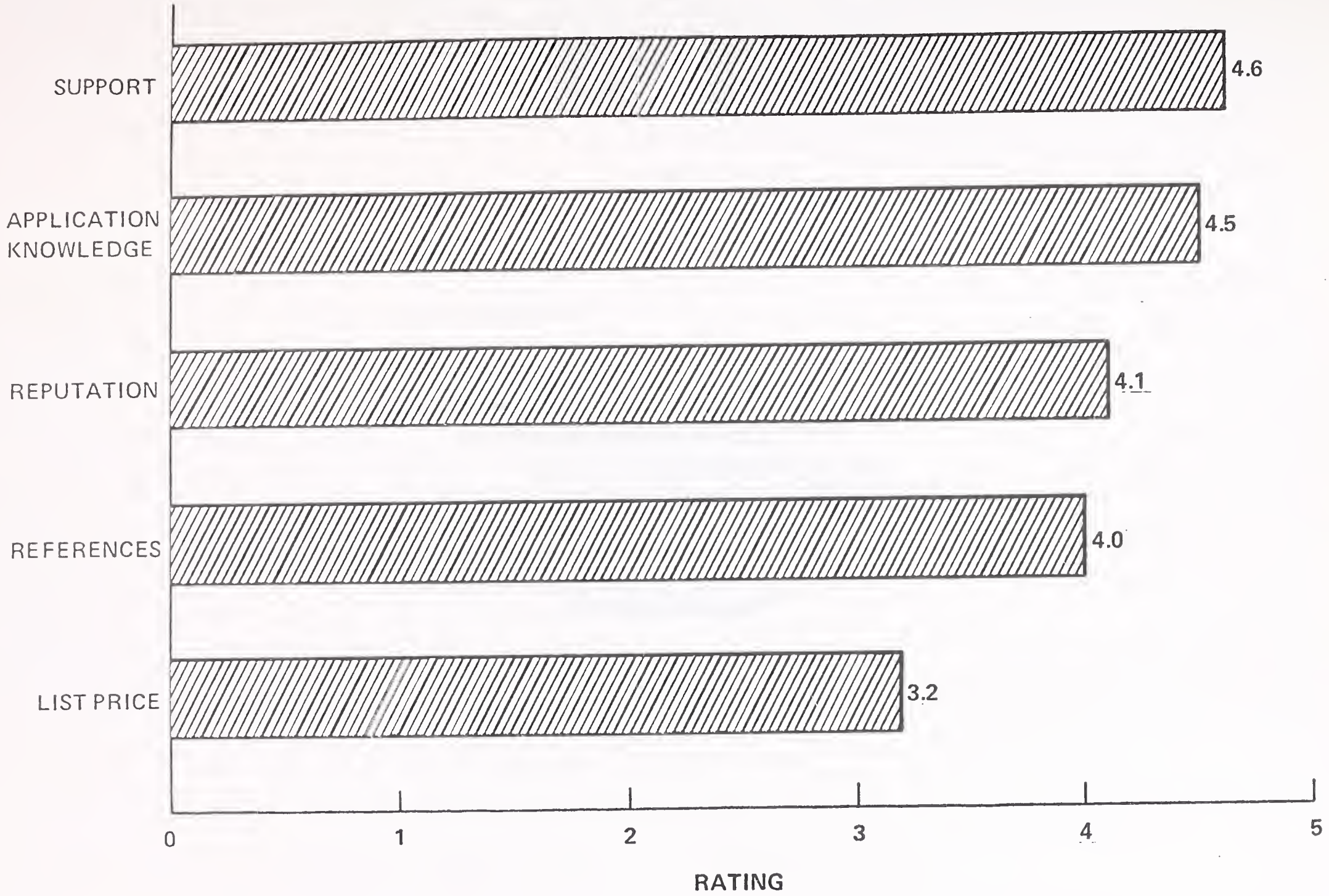
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

RCS SELECTION FACTORS



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

SOFTWARE PRODUCTS SELECTION FACTORS



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

DISCOUNTING

- BUYERS
  - DON'T UNDERSTAND POLICIES
  - NOT KEY TO CLOSING

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

DISCOUNTING

- RCS VENDORS
  - PATTERN DISCOUNTS TO EVEN WORKLOAD
  - TERM CONTRACT DISCOUNTS MOST COMMON
  - UTILITY DISCOUNTED MOST HEAVILY
- SOFTWARE PRODUCT VENDORS DISCOUNT FOR:
  - MULTIPLE PROCESSORS
  - MULTIPLE INSTALLATIONS

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

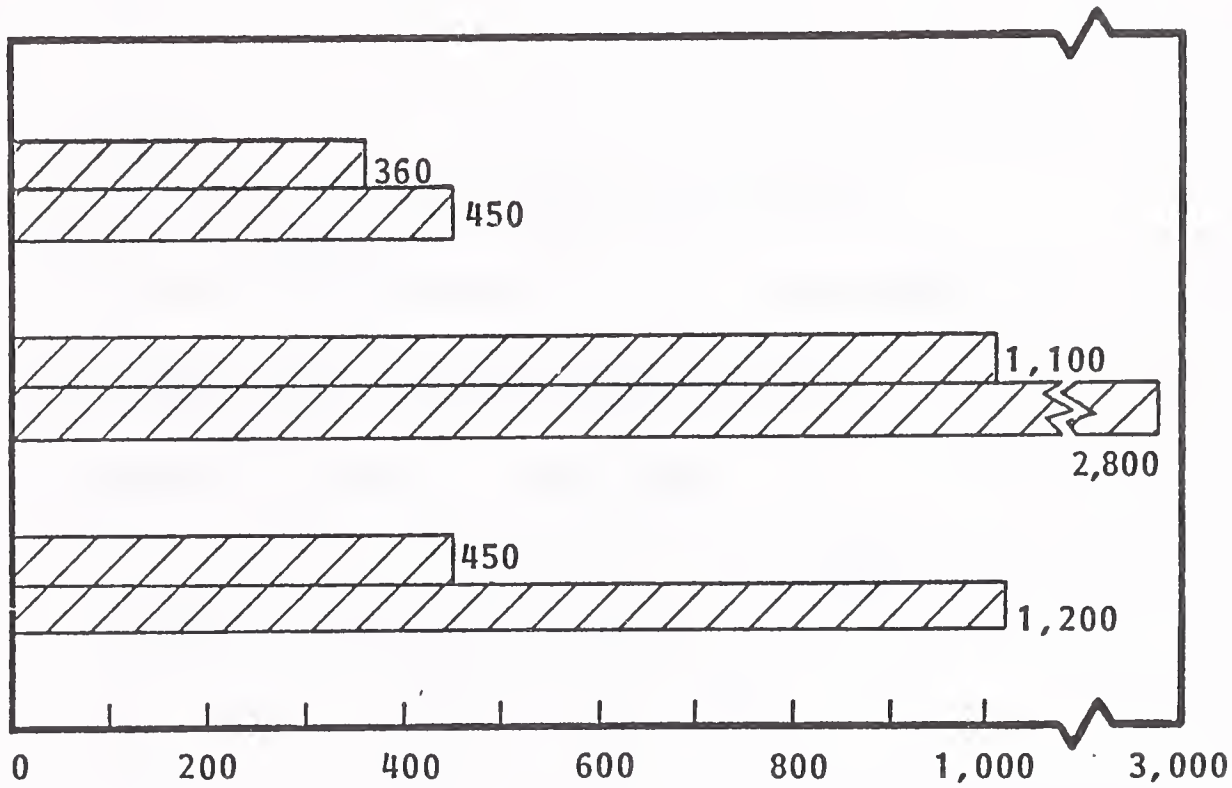
SALES PRODUCTIVITY
1979 REVENUE PER EMPLOYEE

- PROCESSING SERVICES
  - — $43K/EMPLOYEE (12% IMP.)
- SOFTWARE PRODUCTS
  - — $54K/EMPLOYEE (5% IMP.)
- PROFESSIONAL SERVICES
  - — $36K/EMPLOYEE (13% IMP.)

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

SALES PRODUCTIVITY 1979 REVENUE/SALES REPRESENTATIVES

- PROCESSING
  - SPECIALIZED
  - GENERAL
- PROFESSIONAL SERVICES
  - COMMERCIAL
  - FEDERAL GOVERNMENT
- SOFTWARE PRODUCTS
- TURNKEY



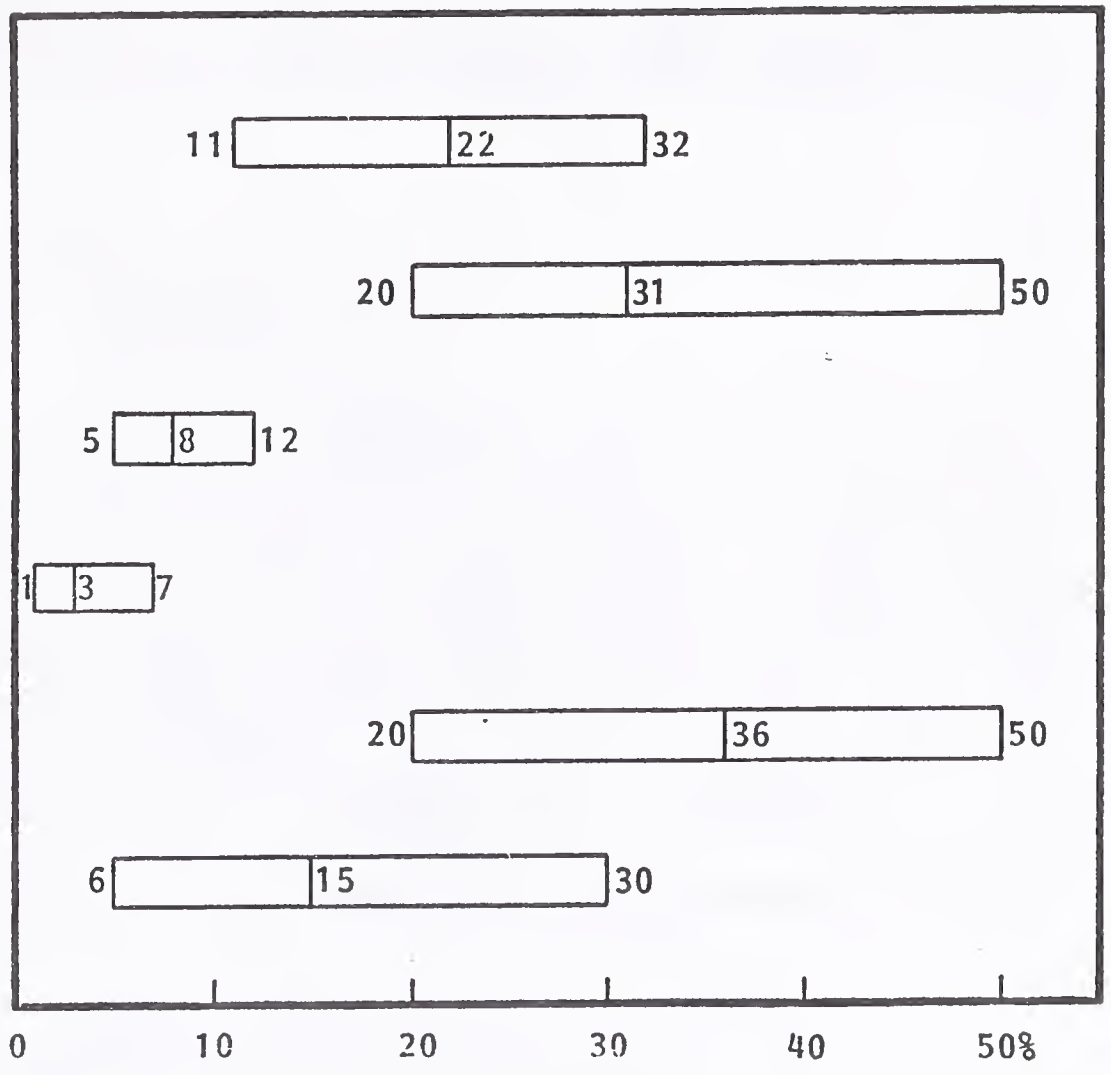
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

SALES PRODUCTIVITY

- TURNOVER REDUCED, < 20% 1980
- NO SIGNIFICANT CHANGES IN SALES PLANS
- IMPROVE SELECTION PROCESS — No. 1 STRATEGY
- COMMISSIONS ABOUT A THIRD OF SALES REP. INCOME

SALES/PRODUCTIVITY
SALES/MARKETING COSTS

- PROCESSING
  - SPECIALIZED
  - GENERAL
- PROFESSIONAL SERVICES
  - COMMERCIAL
  - FEDERAL GOVERNMENT
- SOFTWARE PRODUCTS
- TURNKEY



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

SALES PRODUCTIVITY: IMPORTANT SALES OBJECTIVES

	PROCESSING		PROFESSIONAL SERVICES		SOFT-WARE PRO-DUCTS	TURN-KEY
	SPEC.	GEN.	COM.	FED. GOV.		
NEW REVENUES	▨	▨	▨	▨	▨	▨
ADDITIONAL REVENUES		▨	▨			
PROFIT				▨		
NEW ACCOUNTS	▨		▨	▨	▨	▨

▨ IMPORTANT

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

V COMPETITION

COMPANY	1979 REVENUES	AAGR
EXXON	$85B	15%
AT&T	45	12
IBM	23	12
GE	23	12
ITT	17	11
GTE	10	14
XEROX	7	14
TI	3	24

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

IBM STRATEGIES/TACTICS

- NEW SYSTEMS IMMINENT
- TELECOMMUNICATIONS EMPHASIS
  - TIE TO OFFICE AUTOMATION
  - LOCAL NETWORK SYSTEMS

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

IBM STRATEGIES/TACTICS

- TURNKEY SYSTEMS POSSIBILITIES
- SOFTWARE AND SERVICES
  - INCREASING REVENUE SOURCE
  - APPLICATION DEVELOPMENT MACHINES
  - ENHANCED HARDWARE SERVICES

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

IBM NEW, LARGE-SCALE SYSTEM

- ANNOUNCEMENT IN NEXT SIX MONTHS
- MULTIPLE-PROCESSOR SYSTEM
- EXTENDABLE IN PLACE
- "VIRTUAL" SYSTEM USING H/F/S
- NEW SOFTWARE – END OF THE BUNDLED ERA

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

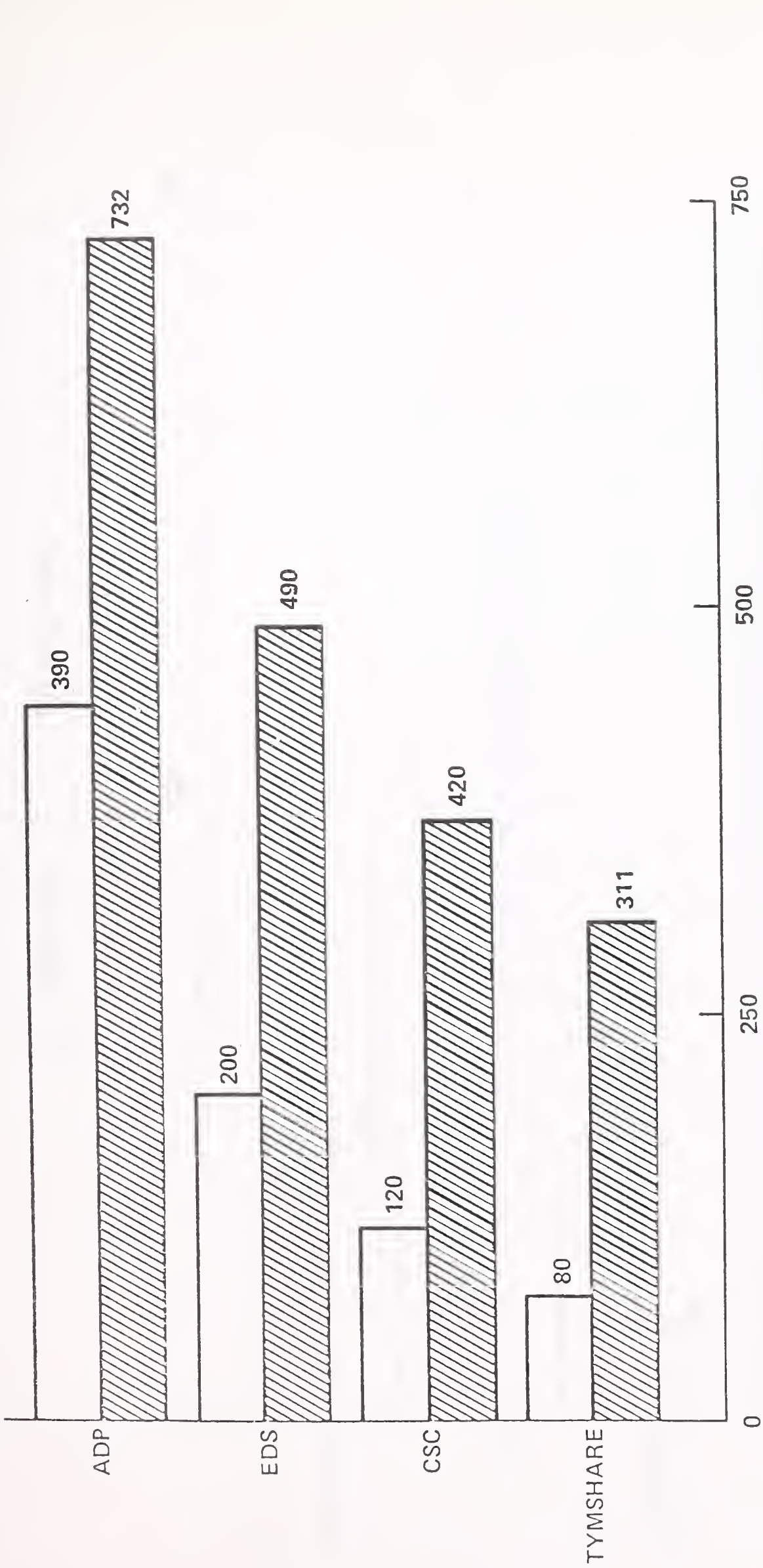
'USER' COMPETITIVE ACTIONS

- 'TIME-SHARING' CONTINUES IN-HOUSE GROWTH
- MANUFACTURERS WILL PROVIDE SERVICES TO DISTRIBUTORS AND SUB-CONTRACTORS
- BANKS PROVIDING DDP SERVICES TO CORRESPONDENTS

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

'USER' COMPETITIVE ACTIONS

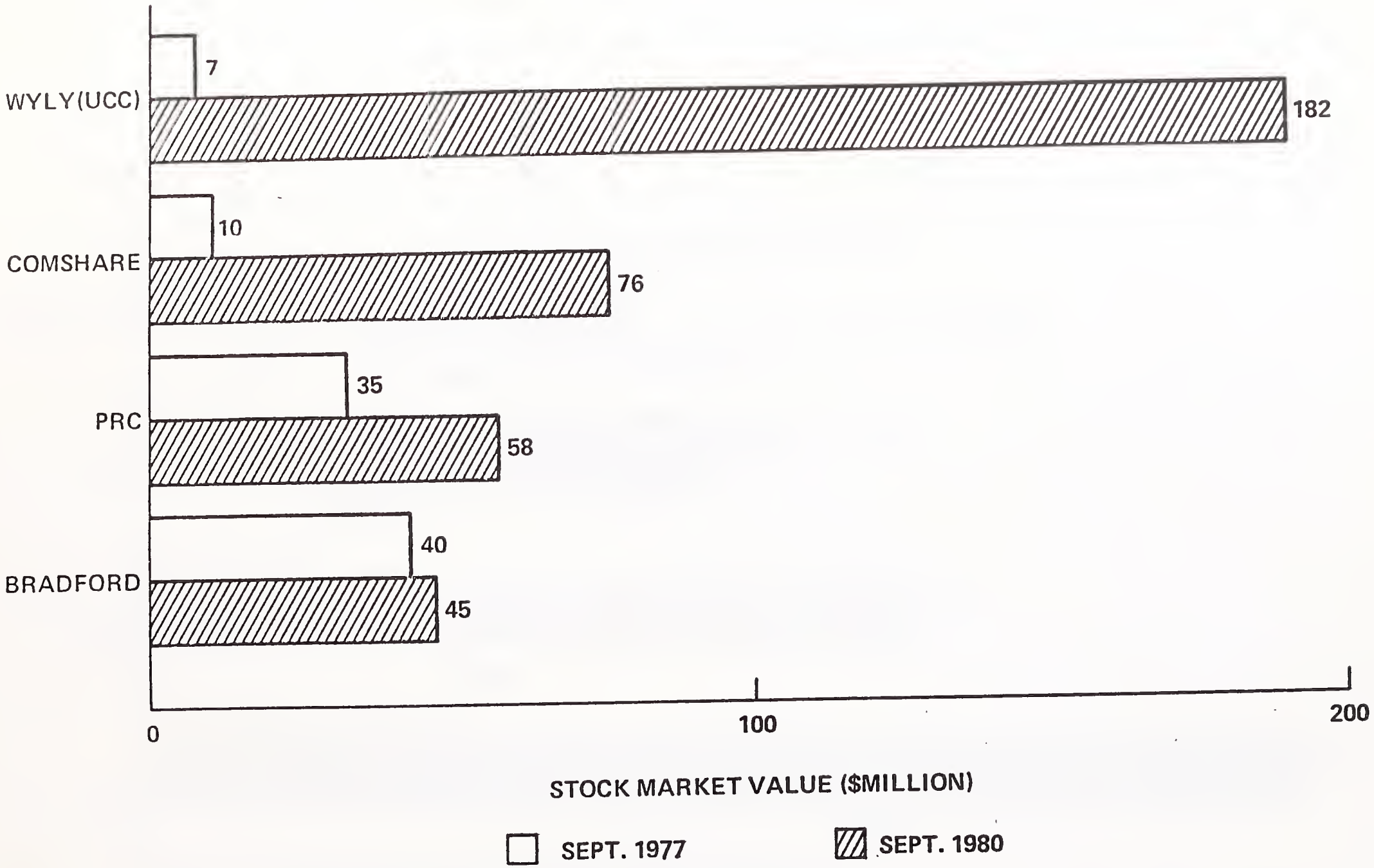
- INSURANCE COMPANIES ESTABLISHING JOINT VENTURES FOR AGENT/BROKER SERVICES
- AIRLINES TIE-IN SERVICES TO OTHER AIRLINES
- TREND WILL ACCELERATE



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

MARKET VALUE



PROFITABILITY
PROFIT BEFORE TAXES

- PROCESSING SERVICES

  - PUBLIC COMPANIES – 13%
  - OVERALL – 10%
  - COMPANIES OVER $10 MILLION MOST PROFITABLE

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

PROFITABILITY

- SOFTWARE PRODUCTS

  – PUBLIC COMPANIES – 10%
  – OVERALL – 11%

- PROFESSIONAL SERVICES

  – OVERALL AND PUBLIC – 7%

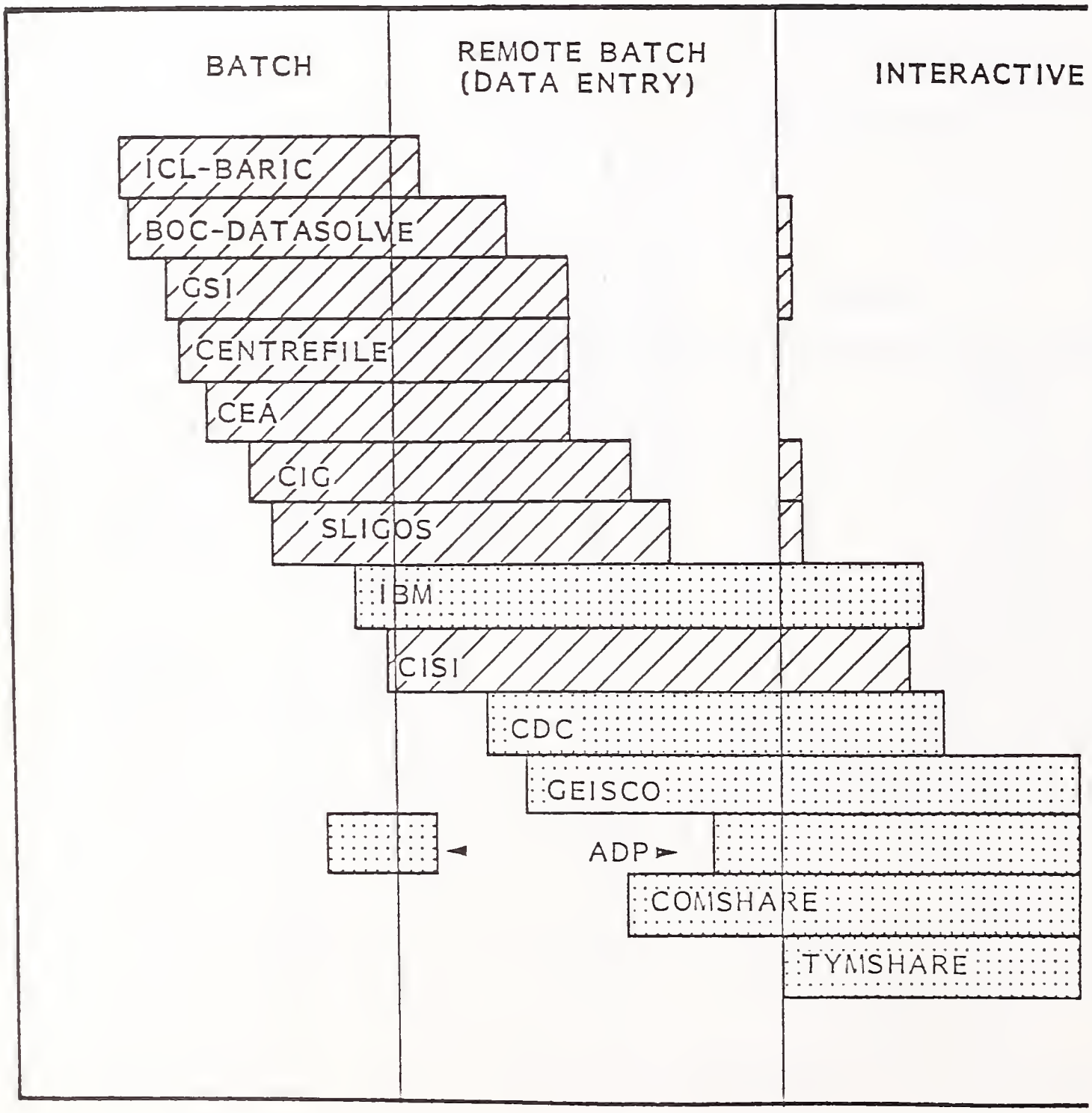
© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

MAJOR EUROPEAN PROCESSING SERVICES VENDORS

NAME	SERVICES REVENUES ($ MILLION)	NATIONALITY
IBM	$350	U.S.
GSI	180	FRANCE
CISI	160	FRANCE
GEISCO	100	U.S.
DATEMA	50 (EST.)	SWEDEN
UCC/AC-SERVICE	46	U.S.
CONTROL DATA	74	U.S.
ADP	24	U.S.
COMSHARE	23	U.S.
TYMSHARE	18	U.S.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

MODE-OF-ACCESS ORIENTATION



© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

1980 ACQUISITIONS

- SCHLUMBERGER/MDSI ~ $190M
- BURROUGHS/SDC ~ $100M
- AMERICAN EXPRESS/FIRST DATA RESOURCES ~ $50M
- H&R BLOCK/COMPUSER V ~ $23M

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

1980 ACQUISITIONS

- WYLY – (UNIVERSITY COMPUTING COMP.)/DIGITAL SYSTEMS OF FLORIDA ~ $16M
- NIXDORF COMPUTER CORP/THE COMPUTER SOFTWARE CO.
- TYMSHARE/TELECHECK & MICROBAND CORP. OF AMERICA
- ANACOMP/KRANZLEY
- WALLACE BUSINESS FORMS/BUSINESS DATA, INC.

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

INPUT 150

- LARGEST U.S. COMPUTER SERVICES COMPANIES:

  - U.S. AVAILABLE REVENUE AT LEAST $10M
  - PROCESSING SERVICES, SOFTWARE PRODUCTS
  - PROFESSIONAL SERVICES, TURNKEY SYSTEMS

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

INPUT 150

- ACCOUNT FOR $6.6B IN COMPUTER SERVICES AND TURNKEY SYSTEMS REVENUES IN FY 1979
  - $3.5B IN PROCESSING SERVICES
  - $1.0B IN SOFTWARE PRODUCTS
  - $1.6B IN PROFESSIONAL SERVICES
  - $0.5B IN TURNKEY SYSTEMS

TOTAL 1979 AVAILABLE U.S. COMPUTER SERVICES REVENUE

OVER $200M

IBM
CDC
CSC
ADP
EDS

$100-200M

GEISCO
TYMSHARE
SDC
McAUTO
BRADFORD
UIS
PRC
NCR

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

1979 U.S. AVAILABLE PROCESSING SERVICES REVENUE

OVER $100M

CDC
ADP
GEISCO
TYMSHARE
EDS
McAUTO
CSC

$50-100M

UIS
NCR
BRADFORD
SMS
BANK OF AMERICA
MEAD DATA
BCS
TRW
NATIONAL CSS
FIRST DATA RESOURCES
NATIONAL DATA CORPORATION

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

1979 U.S. AVAILABLE SOFTWARE PRODUCT REVENUE

OVER $25M

IBM
BURROUGHS
HONEYWELL
DEC
NCR
MSA
INFORMATICS

$10-25M

HP
UNIVAC
UCC
CINCOM
INFORMATION SCIENCE
DG
TI
PANSOPHIC
FLORIDA SOFTWARE
ISA
ADR
SOFTWARE AG
SOFTWARE INTERNATIONAL
TANDY
COMPUTER ASSOCIATES

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.

1979 U.S. AVAILABLE PROFESSIONAL SERVICES REVENUE

OVER $50M

CSC
SDC
IBM
MITRE
PRC
CDC

$25-50M

ARTHUR ANDERSEN
SYSTEMS CONSULTANTS
BRADFORD
EDS
SYSTEM AND COMPUTER TECHNOLOGY
INFORMATICS
AMERICAN MANAGEMENT SYSTEMS

© 1980 by INPUT, Palo Alto, CA 94303. Reproduction Prohibited.